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END OF LIFE DECISION, EUTHANASIA, IN A BELGIAN SUPPORTIVE CARE UNIT

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Introduction: The Belgian legal framework authorizes since 2002 the practice of euthanasia, under certain conditions. We propose to present our experience over 6 year period.
We established a database containing all information relating to the hospitalized patient in our 10 beds service. We have considered the cases that requested and received euthanasia in compliance with legal guidelines. These results do not include cases of euthanasia in other services or at home.
Results: 20 patients have requested and received euthanasia between January 2004 and December 2009 (2004: 0, 2005: 1, 2006: 1, 2007: 4, 2008: 6, 2009: 8). The average age of applicants was **59** years. During the same period, we recorded **397** deaths for a total of **1025** patients and **1302** admissions (many patients have been hospitalized on several occasions). Cases of euthanasia thus represent **5**% of deaths in service.
Please note that in 2009, **822** cases of euthanasia were reported in Belgium.
In each case of euthanasia, the doctor in charge was present, the family fully informed of the patient decision and he or she repeatedly confirmed that decision. All patients had access to optimal comfort care, including: pain control, psychological and psychosocial support.
The nurses and paramedics were involved in decision making.
All patients had cancer at an advanced stage and were aware at the time of the act. They refused sedation prior and had requested that their relatives were present. All were state of hopelessness and loss of dignity face to their physical deterioration.
Sodium pentothal has been administered intravenously at a dose of 2 grams followed in some cases by a muscle relaxant as soon as the patient lost the consciousness.
Conclusions: The Belgian legal framework can meet expectations of patients without drifts, in respect of patient rights. The doctor had assumed every time her/his responsibilities. No suspected cases have been reported in our institution.

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PALLIATIVE MEDICINE FELLOWSHIPS: A STUDY OF RESIDENT CHOICES

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Background: There is no data on the reasons physicians choose fellowship training in Hospice and Palliative Medicine (HPM).
Methods: Survey of fellows initiating training in July 2009
Results: 72 physicians initiated the study with 58 (81%) completing all questions. 54% were age 30–40 and 61% were female. 70% were non-Hispanic Caucasian and 25% were Asian. 61% were internal medicine trained. Most (90%) had experienced the death of a family member or friend. The major reasons for choosing the specialty were relief of suffering (82%), end-of-life care (76%) and communication (76%). 60% had no exposure to hospice or palliative medicine in medical school whereas 63% had an exposure available during residency. 62% did not feel prepared to manage dying patients and 38% felt personal regret at the care they delivered. 47% decide to enter fellowship in their 3rd year of training and 50% of applications were completed during the third year of residency. Accreditation (67%), strength of education (53%), and a hospital palliative medicine service (51%) were required for selection of a fellowship program.
Conclusions: Negative experiences in residency continue to be a factor in selection of HPM as a specialty. Medical school exposure remains limited. Many residents make their decision to enter the field and apply during PG3. Fellows require a broad range of experience when selecting a fellowship program.

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IMPAIRED SLEEP AND GLUCOSE METABOLISM ON PROSPECTIVE AND WORKING MEMORY IN BREAST CANCER PATIENTS:A LONGITUDINAL STUDY

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Background: Some patients present memory deficits after experiencing chemotherapy. Aetiology of this phenomenon remains unknown. Objective neuropsychological measures have shown inconsistency within patients' self-reports. It is proposed that Working and Prospective memory play an important role since patients' anecdotal reports correlate with deficits in some aspects of memory. Sleep, sleepiness and glucose metabolism are altered during chemotherapy which may play a role in cognitive impairment.
Methods and design: 9-month longitudinal study. Clinical scales, blood samples, comprehensive neuropsychological battery, and objective and subjective measures of sleep and sleepiness, will be administered at 4 time-points.
Procedure: 90 participants: 30 breast cancer patients scheduled for chemotherapy; 30 breast cancer patients receiving

treatment other than chemotherapy; 30 healthy participants. They will wear an actiwatch (sleep-wake activity) and maintain a diary at Baseline, Mid (before 3rd chemotherapy cycle), Post (after 6th chemotherapy cycle), and Follow-up (6 months). Non-chemotherapy patients and healthy participants will be assessed at equivalent times. Pupil aperture will be measured on test day together with a blood sample.

Analysis: SPSS statistical program will be used to conduct multivariate ANOVA for between-groups (Chemotherapy/Non-chemotherapy/Healthy controls), and for within-subjects (Baseline/Mid/Post/Follow-up) factors.

Discussion: It is important to analyse subjective and objective measures, as well as more ecological and sensitive measures such as those of specific neuropsychological batteries in order to detect the mild cognitive impairment as sequelae of chemotherapy. Sleep, sleepiness, and glucose metabolism, should also be considered as chemotherapy treatment may affect them, and subsequently affect changes in cognition.

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SPIRITUAL CARE, NEGLECTED ASPECT OF HEALTH IN CANCER MANAGEMENT

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Health is complete physical, mental, social, spiritual and ecological well being. But the prevailing medical science paradigm is based on biological model only.The holistic conception of health encompasses the biological, psychological, social, and spiritual well being of an individual and his/her social community under conditions of equity.Spirituality in Latin means "**breath**" and "a sense of connection to something greater than oneself ". It is that part of human beings which seek "**meaning**" and "**purpose of life**".Spiritual beliefs and spiritual practices may impact both on a person's response to a certain disease and the outcome of disease process. Evidently, spiritual factors like adaptation and acceptance have a positive impact on the course of cancers, substance abuse disorders and other diseases, whereas anxiety and indifferentism are obviously negative factors in coping with most of diseases.Religious and spiritual beliefs are important aids in coping with serious diseases in a positive way, and remaining the central point of reflection in patients when all biomedical treatments are no longer effective in terminal disease.Patient's spiritual believes can impact diagnoses, treatment and follow up of cases. Cancer survivors often rely on their religious and spiritual beliefs as a way of deriving the meaning of their illness experience and survivorship.Although addressing spiritual concerns is often considered a life issue, such concerns may arise at any time after diagnoses. In Islamic content there are many strong believes concerning the spiritual concept to support life of people living with cancer, qualitatively and quantitatively which will be discussed in this paper.

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ACUPUNCTURE FOR BREAST CANCER THERAPY INDUCED VASOMOTOR SYMPTOMS; A PROSPECTIVE COHORT STUDY

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Introduction: Early menopause in breast cancer patients induced adjuvant treatment with chemotherapy, ovarian ablation, Tamoxifen or aromatase inhibitors. The vasomotor side effects of breast cancer treatment can occur more frequently, and be more severe, and of greater duration than those occurring in natural menopause.

Aims: Breast Cancer therapy induced vasomotor symptoms can affect patients' quality of life. This study examines auricular acupuncture (AA) as a potential effective treatment for these symptoms.

Methods: One hundred and fifty women undergoing a form of breast cancer therapy and were suffering hot flushes as a result, were treated according to the National Acupuncture for Detoxifications protocol (NADA).Data analysed was obtained using the Measure your concerns and well being questionnaire (MYCaW), visual analogue scores of frequency and intensity of day and night time symptoms, and the occurrence of sleep disturbance.

Results: Paired t-tests showed statistically significant reductions in frequency and intensity of both daytime and night time hot flushes over the study period by 71% and 63%, and 68% and 68% respectively. The perscentage of patients suffering sleep disturbance was reduced from 97.3% to 31.3% (Chi-square test $P=<0.0001$)

Conclusion: Auricular Acupuncture is a cost-effective, safe and well tolerated treatment for vasomotor symptoms associated with breast cancer therapy

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PALLIATIVE SEDATION FOR TERMINALLY ILL PATIENTS WITH CANCER: FAMILY CONCERNS AND LEVELS OF GRIEF

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Introduction: It is more popular to using the palliative sedation therapy to control intractable and refractory symptoms in terminally cancer ill patients. But it may cause profound family distress, even effect their grief.
Objectives: The purpose of this study is to determine the family concerns and levels of grief in palliative sedation.
Methods: The survey of the families of cancer patients who received palliative sedation at palliative care unit in one of the medical center in Taipei. The questionnaire survey assessed 81 bereaved families, 41 families that the patients were received the palliative sedation therapy and 40 were not.
Results: The result of this study was that there was significant in the patients who were received the palliative sedation therapy that the families the levels of grief was higher than not used. Since using the palliative sedation therapy to death was 10.83 days that was longer than foreign. The families were think that is too early to let patients received the palliative sedation therapy. The family concerns were there might be other way for symptom relief, feeling as though the patients was forced to sleep and wish there had been a chance for the entire family to discuss.
Conclusions: We hope that the medical staff can provide information about palliative sedation therapy to families and let them have enough time to discuss. We must fine the most appropriate time to sedate the imminently dying with refractory symptoms.

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REDUCING THE RISKS OF BISPHOSPHONATE-RELATED OSTEONECROSIS OF THE JAW AMONG METASTATIC CANCER PATIENTS

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Objectives: Bone metastases are a common feature of advanced cancer. In addition to the immeasurable effect to the patient they are costly in terms of patient encounters, resources utilization and cost. Bisphosphonates have been used effectively by inhibiting bone turnover and osteoclastic function. The management of the rare but serious side effect bisphosphonate-related osteonecrosis of the jaw (BRONJ) is less well documented. In order to avoid risks of BRONJ among such patients we have arranged a fast track referral system to Maxillofacial Surgery Department for assessment and atraumatic removal of dentition prior to the commencement of bisphosphonates.
Methods: The uro-oncology nurse practitioner leads a metastatic bone cancer clinic. Clinical and radiological assessment of dentition is undertaken by maxillofacial surgery team before bisphosphonate therapy begins. The necessary extraction or surgical removal of teeth/roots are carried out atraumatically and primary mucosal closure with resorbable sutures wherever it is possible. Patients requiring dental restorations are referred to a dedicated community dental service.
Results: 20 patients with metastatic cancers have been referred through the fast track system for oral assessment. 19 patients required dental treatment before commencing treatment with bisphosphonates. None of our patients have developed symptoms of BRONJ.
Conclusions: Early removal of teeth/roots and primary mucosal closure to cover the healing alveolar bone before starting bisphosphonate therapy are key to preventing BRONJ. Long term surveillance and maintenance of good oral and dental hygiene by dental practitioners are paramount because half life of bisphosphonate is up to 10 years.

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AN OBSERVATIONAL PROSPECTIVE COHORT STUDY ON THE DOSE EFFECT OF ZOLEDRONIC ACID ON URINARY N-TELOPEPTIDE LEVELS IN METASTATIC PROSTATE CANCER

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Introduction: Zoledronic acid a potent inhibitor of bone resorption, has been shown to prevent, reduce and delay skeletal related events (SRE's e.g. bone pain, pathological fractures & spinal cord compression), in metastatic prostate cancer. Dose related side effects are well documented. The study aim was to evaluate the treatment dose related effect of zoledronic acid in the suppression of bone resorption by measurement of urinary N-telopeptide of type 1 collagen (Ntx).
Methods: 47 metastatic prostate cancer patients on androgen deprivation therapy, were treated with zoledronic acid on a monthly basis. Patients were divided into two groups; high dose (4 mg) $n=32$ median age 72 (59–86); low dose (3.0–3.5 mg) $n=15$ median age 77 (53–91),doses based on creatinine clearance levels. Treatment

range 9–36 months (median 15 months). Non metastatic patients on androgen deprivation therapy (n=15) were included as controls for baseline Ntx comparison only. Data was collected prospectively at baseline, then at 3 monthly intervals. Urinary Ntx were measured using urinary creatinine as a control.

Results: At baseline, significant osteolytic activity was seen in the metastatic prostate cancer groups, compared to control, 35/47 (74% >63BCE/Cr.

70–80% reduction in Ntx levels, from baseline to 3 months. No difference seen between the high dose and low dose in its ability to reduce bone resorption (p=0.21).

Conclusions: Despite osteoblastic appearances seen in metastatic prostate cancer, these data support the findings of significant malignant osteolysis.No dose related difference was seen with zoledronic acid to suppress bone resorption, suggesting that lower doses could be considered with comparable effects.

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TO ANALYSE THE RELATIONSHIP BETWEEN THE SELF-EFFICIENCY AND THE REHABILITATION OF THE POST-OPERATIVE BREAST CANCER PATIENTS

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Aim: To do the research on the relationship between the self-efficacy level and the post-operative recovering situation of the breast cancer patients.

Methods: To use the questionnaire of the general information of the breast cancer patients designed by my-self and the Chinese version of the GSES(general self-efficacy scale)designed by Schwarzer to do the investigation on 50 female breast cancer patients in the hospital from Feb.19th,2008 to June30th, 2008.

Outcome: To analyze the data of the questionnaires by software SPSS10.0 in order to outline the relationship among the self-efficacy, diploma, the family economic situation and the post-operative recovering situation of the breast cancer patients.

Conclusion: There is an obviously relationship among the self-efficacy, diploma, and the post-operative recovering situation of the breast cancer patients, however, there is not a positive relationship between the self-efficacy and the family economic situation of the breast cancer patients. Thus, in the clinical practice, as we propose a project and carry on the nursing intervention, we should pay attention to improve the self-efficacy of the breast cancer patients so that the self-care of one-self can be developed greatly.

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RESTORATION OF NORMAL FUNCTION OF LIVER IN CANCER-INDUCED RATS USING A NATURAL PRODUCT: IMMUNOHISTOCHEMISTRY APPROACH

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Natural products are promising chemo-preventive agents against different types of cancer. The aim of the present work is to investigate the chemo-protective effect of ethanol extract of Saffron on chemically-induced liver cancer in rats. Hepatocarcinogenesis was induced by a single intraperitoneal injection of diethyl nitrosamine (DEN) (200 mg/kg body weight) and 2 weeks later, the carcinogenic effect was promoted by 2-acetylaminofluorene (2-AAF) (0.05%). Male Wistar rats were divided into six groups: negative control, positive control (DEN+2-AAF), saffron-alone group (saffron for 22 weeks, no DEN or 2-AAF) and 3 preventive groups (where saffron was administered at 300, 150 and 75 mg/kg for 2 weeks before and 20 weeks after inducing cancer). The incidence and multiplicity of liver tumors as well as the expression of cancer marker, glutathione S-transferase placental form, were significantly reduced in preventive groups. Immunohistochemical analyses showed a decrease in cell proliferation marker (Ki67) and an increase of TUNEL-and caspase 3-positive apoptotic cells along with strong expressions of p53 in liver of preventive groups. These protective effects found to be mediated by anti-inflammatory and antioxidant effects. The anti-inflammatory activity was confirmed by saffron-based inhibition of inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) protein expression. The effect of saffron on the expression of nuclear factor nuclear factor-Kappa B (NF-kappa B) was also assessed. The expression of NF-kappa B in the preventive groups was significantly low compared to positive control. Therefore, NF-kappa B transcription factor seems to regulate the saffron chemo-protective effects.

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INTEGRATIVE THERAPIES FOR UNWANTED (SIDE) EFFECTS OF CONVENTIONAL TREATMENT

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Conventional treatment is extremely difficult to go through and many with cancer cannot complete the required number of them. Often drugs are given to help allow the continuation of therapy. However all too many people do

not respond well or have newly acquired problems as a result of the drugs, i.e. constipation. It is really in the best interest of a person with cancer to consider the use of complementary or integrative approaches. These may include a change in nutrition, increased physical exercise/movement, massage, yoga, dietary supplements, herbs and much more. Advocates often wonder why these less toxic/kindler, gentler modalities are not freely discussed and offered to patients under treatment. Recently studies have shown that ginger is extremely effective in cutting off nausea yet is even now, rarely offered. Pain relief can be obtained in a variety of less toxic ways which the oncology community seems unaware of. Studies have touted the benefits of yoga and its use among those with cancer seems to be on the rise. Concern about the long term and even short term unwanted effects of conventional treatment has caused patient advocates to focus on the integrative approaches long ignored.

The Annie Appleseed Project, online since 1999 offering information on a great many modalities that are finding favor among people with cancer. We work to bring this to people in need, including all types of cancers, all ages and stages. www.annieappleseedproject.org

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PSYCHOLOGICAL DISORDERS IN SURGICAL PATIENTS WITH CANCER

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Introduction: Behavioral and psychological disorders in surgical patients treated for malignant diseases are not always adequately appreciated and often neglected. However, they are very important in the therapeutic process because they may severely disturb physical and psychological rehabilitation, effective struggle with malignancy, environmental relationships and quality of life. Professional preoperative psychological assessment is really necessary to facilitate therapy for malignant diseases in those patients who are specifically exposed to a severe stress situation.

Aim: The aim was to investigate the incidence of depression, hallucinations and anxiety in patients undergoing surgery for malignancy of digestive tract.

Material & Methods: A routine program of psychological and psychiatric care for patients with malignancy who undergo extensive surgical procedures was implemented in our department several years ago. The program allows for identification of patients with a high risk of psychiatric disorders.

98 patients with advanced malignancy were followed after the surgery between 2009–2010. All were examined by a professional psychologist. QLQ C-30 (EORTC) questionnaire was used to assess the quality of life.

Results: Psychotic disorders were present in 39,4% of examined patients. Depression was dominating (57%), anxiety (24%) and hallucinations (19%). Mean hospital stay was not different between those with and without psychotic disorders. QoL index for patients at risk was 42,6 versus 51,8 for more psychologically stable patients.

Conclusions: Approximately 40% of patients undergoing the surgery for malignant diseases develop severe psychotic disorders in the postoperative period. Preoperative psychological assessment seems to be extremely useful in providing adequate psychological support for individual patient postoperatively.

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GENOME-BASED TRANSCRIPTOME PROFILE OF SOME ETIOLOGICAL PARAMETERS IN BREAST CARCINOMA: TWO CASES REPORT

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The gene expression profiles have a potential to become an important tool for diagnosis and predicting prognosis in breast cancer. Peripheral transcriptome profiles of two cases with different stages and of a control healty person are given in the current report.

Total genomic RNA was isolated from peripheral blood tissue of affected two proband cases and one control case. Multiplex tandem PCR technique was performed followed by surgery. The mRNA expressions of all 20 genes were assessed by reverse transcription-polymerase chain reaction.

We performed a series of expression profiles of some etiological gene pruducts in two cases. The first proband case of stage 2A was triple-positive and the second proband case of stage 2B was negative for breast cancer receptors. The prognostic prediction of the transcriptome profiles was high in the second proband case when compared with both the first proband case and the control case profiles.

Current results show the peripheral blood tissues contribute to the development of prognostic gene signatures in breast carcinomas. The quantitative measurements may facilitate the development of more personalized treatment strategies.

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NEUTROPENIA AND GRANULOCYTE COLONY STIMULATING FACTOR IN NEOADJUVANT INTRAPERITONEAL AND SYSTEMIC CHEMOTHERAPY (NIPS) IN GASTRIC CANCER WITH PERITONEAL DISSEMINATION

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Objectives: NIPS is a new treatment modality in gastric cancer with peritoneal seeding. Phase II clinical trials with NIPS and cytoreductive surgery have shown an increase in overall survival with an acceptable toxicity in Japanese populations. We report the toxicity related to neutropenia and granulocyte colony stimulating factor (GCS-F) use from the first experience in Spain with NIPS in gastric cancer with peritoneal carcinomatosis.
Methods: Fourteen consecutive patients have been enrolled in this protocol in a compassionate use program in our center from 2006 to 2010. Chemotherapy was delivered through an implantable peritoneal catheter. The patients received two different regimens of NIPS on a weekly basis (Table 1). Primary prophylaxis with G-CSF was not used as described in the phase II studies. Clinical characteristics

Age-year	Median 49.5 Range 28–62
Sex—no. (%)	Male 10 (71.4%) Female 4 (28.6%)
ECOG—no. (%)	0: 3 (21.4%) 1: 9 (64.3%) 2: 2 (14.3%)
NIPS in front line treatment—no. (%)	12 (85.7%)
NIPS in second line treatment—no. (%)	2 (14.3%)
Previous chemotherapy—no. (%)	Yes 10 (71.4%) No 4 (28.6%) Triplet 8 (57.1%) Doublet 2 (14.3%)
Prevoius adjuvant radiotherapy—no. (%)	Yes 2 (14.3%) No 12 (85.7%)
Previous surgery—no. (%)	Yes 2 (14.3%) No 12 (85.7%)
Chemotherapy—no. (%)	Carboplatine regimen/weekly basis: 5 (35.7%) Carboplatin 150 mg intraperitoneal Docetaxel 40 mg intraperitoneal 5-Fluorouracil 600 mg/m2 bolus iv Methotrexate 100 mg/m2 iv. DCF-like regimen/ weekly basis: 9 (64.3%) Cisplatin 25 mg/m2 intraperitoneal Docetaxel 25 mg/m2 intraperitoneal 5-Fluorouracil 600 mg/m2 bolus iv Methotrexate 100 mg/m2 iv
Number of chemotherapy doses	Median 4. Range 2–6. Total: 63. 2 doses: 1 patient; 3 doses: 0 patient; 4 doses: 8 patients; 5 doses: 1 patients; 6 doses: 4 patients;

[Chemotherapy regimens and baseline characteristics]

Results: The incidence of grade 3–4 neutropenia was 57.1% and any grade neutropenia 85.7%. Febrile neutropenia was described in 42.8% of the patients. All patients received secondary prophylaxis according to ASCO guidelines. No treatment-related deaths were observed. One patient discontinued chemotherapy due to febrile neutropenia and diarrhoea. There were no complications due to the infection of peritoneal catheter. Late or unexpected toxicities have not been observed.
Conclusions: The first results suggest that the febrile neutropenia rate exceeds the 20% ASCO threshold. Primary prophylaxis with G-CSF should be strongly considered in the treatment of these patients.

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DETECTION OF ABDOMINAL INFECTIONS USING ^{99M}TC- ANTIGRANULOCYTE ANTIBODIES

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Purpose: The aim of the study was detection of abdominal infections by ^{99m}Tc- antigranulocyte antibodies.
Methods and Materials: Total of 20 patients with clinical suspicion on abdominal or gastrointestinal infections were investigated. An hour, 4 h and when necessary 24 h after slow i.v. injection of 370 MBq ^{99m}Tc labelled monoclonal antibodies BW 250/183 in the cubital vein, whole body scintigrams were obtained in anterior and posterior positions.
Results: There were 12 true positive (TP) findings (2 subhepatic abscesses after surgery, one perianal fistula, 5 abdominal and one pelvic abscess, 3 M.Crohn), 4 true negative (TN) (2 Tu coeci, Tu pp Wateri, gastric carcinoma), 3 false negative (FN) (2 abscessus subphrenic and enterocolic fistula). In one patient (also TP) pulmonary abscess was confirmed. The smallest lesion found was 20× 20 mm. SPECT increased the number of TP findings from 8 to 13. Seven of 13 infectious of inflammatory lesions could be detected in the early scan. Sensitivity was 81%, specificity 100%, positive predictive value 100%, negative predictive value 57% and accuracy 85%. In 5 patients infection was caused by Escherichia coli, 2 with Proteus mirabilis, 2 with Pseudomonas aeruginosa and 1 with Klebsiella, while in 3 only the surgical confirmation of infection existed. In two FN patients, infection was caused by Proteus mirabilis, while in the third one E.coli was found.
Conclusion: According to our results, scintigraphy with 99mTc antigranulocyte antibodies is an useful method for detection and assessment of exact localization abdominal

infections, which is very important for the prompt and appropriate therapy.

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FATIGUE, DEPRESSION AND HEALTH-RELATED QUALITY OF LIFE IN HEAD AND NECK CANCER PATIENTS

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This research aims to assess the prevalence of depression and fatigue symptoms in head and neck cancer patients during radiotherapy treatment and relate them with these patients' quality of life. Prospective study that The Beck Depression Inventory—BDI, Piper Fatigue Scale-revised and the Functional Assessment Cancer Therapy Head and Neck—FACT H&N were applied at the start, middle and end of radiotherapy for 41 head and neck cancer patients. In the study sample, most patients were men, living in Ribeirão Preto, in the age range over 50, retired and catholic. The clinical characteristics demonstrate that the most prevalent diagnosis was squamous cell carcinoma, followed by larynx carcinoma and low incidence levels of parotid cancer. Most patients underwent surgery and chemotherapy, and all patients were undergoing radiotherapy. The mean BDI and PIPER increased during the radiotherapy treatment. BDI scores did not demonstrate the presence of depression, although the number of symptoms increased in the middle and at the end of treatment. As for the PIPER fatigue scale, mean scores also increased, demonstrating greater presence of fatigue during treatment. The mean FACT H&N decreased in the middle and at the end of treatment, indicating worsening in these patients' Quality of Life. In conclusion, in this research, depression and fatigue symptoms increased during radiotherapy treatment, while quality of life levels decreased. Highly significant correlations existed between BDI, PIPER and FACT H&N, demonstrating that depression and fatigue symptoms are strongly correlated and that their presence negatively influenced quality of life.

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PHASE 2 TRIAL OF APREPITANT ON DAYS 1–7 FOR PATIENTS WITH GERM CELL TUMOURS HAVING CISPLATIN ON DAYS 1–5

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Objectives: The aim of this single-arm, multi-centre, phase 2 trial was to determine the efficacy of giving aprepitant for 7 days to patients having 5 days of cisplatin chemotherapy for germ cell tumours.
Methods: Patients received oral aprepitant 125 mg day 1 and 80 mg days 2–7, $5HT_3$ antagonist days 1–5, and dexamethasone 8 mg days 1–8. Primary endpoint was 'nil emesis' during days 1–7 of cycle 1 assessed by patients with a self-completed diary.
Results: 50 patients recruited from 2009 to 2010 had median age of 30 years. No adverse events were attributed to aprepitant. Efficacy results are tabulated.

	Cycle 1			Historical control of 5HT3 antagonist & dexamethasone (Einhorn, Supp Care Cancer 2007; 15: 1293)	
	Day 1	Days 1 to 5	Days 1 to 7	Day 1	Days 1 to 5
Nil emesis	98%	88%	84%	88%	51%
Nil emesis and nil rescue therapy	84%	47%	43%	83%	34%
No significant nausea (<2/10 on VAS)	84%	45%	41%		

[Currently awaiting diary for one patient]

Conclusions: The nil emesis rate during days 1–7 of 84% (95% CI 70%, 93%) was substantially better than the historical control rate of 50%. These results support the safety, efficacy and further consideration of using aprepitant on days 1–7 for cisplatin on days 1–5.

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STUDYING PHYSICAL AND EMOTIONAL ASPECTS OF SELF-CARE AMONG PATIENTS WITH CANCER REFERRED TO THE CHEMOTHERAPY WARD OF SHIRAZ NAMAZI HOSPITAL

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Introduction: Being diagnosed with cancer is a painful experience for affected persons as well as their relatives. Both disease and it's complication create a variety of symptoms that influence the way of self-care and facing patients with this matter in their prognosis.
Objective: This research has been carried out with the aim to study the way of self-care and knowledge of patients under Chemotherapy regarding the physical and emotional aspects of self-care.
Materials and Methods: This is a descriptive-analytical study and research population was consisting of patients under Chemotherapy referred to the Namazi Hospital among which, 134 persons were selected randomly.
Results: Results indicated that, 101 cases (75.4%) were women with mean age of 46.8 years. Most of samples (64 persons, 47.8%) were illiterate. 113cases (84.3%) were married. Majority of samples (64 cases, 47.8%) were diagnosed with cancer and 72.4% of them used multi-drug treatment. 52.2% of samples had little knowledge about chemotherapy complication and 53.0% of them had no specific source of obtaining information. There was statistically significant relation between physical care score and level of education $P<0.0004$).
Discussion: According to the results of this research, educating cancer patients about self-care is very important and nurses should have more emphasis on teaching programs in order to promote quality of life (QOL) and knowledge of chemotherapy patients.

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PLAN OF A DEPARTMENT OF DENTISTRY FOR PATIENTS UNDERGOING BISPHOSPHONATE THERAPY

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Introduction: Bisphosphonates are a class of drugs used to treat osteoporosis, Paget's disease, bone metastases (with or without hypercalcaemia), multiple myeloma, breast cancer, prostate cancer, lung cancer and all the clinical conditions of bone mass loss, in particular they are used to treat this bone mass loss in patients undergoing Corticosteroid therapy. Their use worldwide is extremely widespread.
Material and methods: One of the few adverse effects during treatment is the osteonecrosis of the jaw (ONJ), which is a fearful event because it affects patient's life quality. This complication can occur spontaneously or after a small trauma of the mucosa or dental surgical procedures. Incidence is low. Nevertheless there are several people undergoing this therapy and the adverse effects occur more often with intravenous administrations.Therefore we planned to establish a dental department dedicated to patients with risk factors for ONJ.
Conclusions: To face up this complication within our department we established a service dedicated to patients with oncologic pathology undergoing bisphosphonates. Our purpose is to give oral preventive and restorative treatment in order to minimize the probability of ONJ onset, following actual international guidelines.Our dental equipe consists of one oral surgeon, one periodontologist, one endodontist, one prosthetist and one dental hygienist. Our workteam includes one maxilla-facial surgeon, one oncologist and one ematologist.

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EFFECTIVENESS OF PERCUTANEOUS METAL STENT PLACEMENT IN CHOLANGIOCARCINOMA PATIENTS WITH MIDTERM FOLLOW-UP: SINGLE CENTER EXPERIENCE

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Purpose: Patients with advanced cholangiocarcinoma present with high rate of local complications. The primary aim of this study is to report clinical course of advanced cholangiocarcinoma patients those who were presented with biliary obstruction and treated with percutaneous biliary stenting.
Material and methods: Patients with unresectable locally advanced or metastatic cholangiocarcinoma followed by our center for a period of 4 years were analyzed. For statistical analysis demographic and clinical characteristics of patients, primary biliary drainage method, metal stent occlusion rate, time to stent occlusion, and overall survival rates were recorded.

Results: A total of 34 eligible patients were analyzed. 27 patients had metal stent placement. These 27 patients formed the basis of this study. Median overall survival (OS) was 6.0 months. After metal stent deployment bilurubin levels were normalized within a mean of 10 days. During the follow-up period, 13 patients were experienced metal stent occlusion. Median time to stent occlusion (TtSO) was 10 weeks. Cytotoxic chemotherapy was administered to 14 (52%) patients. Patients without stent dysfunction had significantly higher rate of chemotherapy exposure rate ($p=0.021$). Statistical analysis, however, failed to exhibit significant effect of stent dysfunction on OS.
Conclusion: In advanced cholangiocarcinoma, relief of bile duct obstruction is an important part of the initial patient management. This study therefore described the clinical value of percutaneous metal stent in cholangiocarcinoma patients and raises the question about patency of metal stent in cholangiocarcinoma whether we can expect success similar to the success achieved in pancreas carcinoma.

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DO IMAGING STUDIES CREATE ANXIETY?

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One of the most important health problems in occidental countries is cancer. It was the first cause of death in men and the second in women in 2008. In patients with diagnosis or suspicion of cancer, imaging studies has an important role.
Objective: The purpose of this study was to evaluate the level of psychological distress among cancer patients during a nuclear medicine procedure (PET-TC).
Method: 200 cancer patients who underwent a PET-CT were examined before the study with STAI (State Trai Anxiety Inventory) scoring system.
Results: 200 patients completed the test and were analyzed. 135 patients (67%) had anxiety. Those patients who underwent PET for the first time had anxiety in a 93%. The patients who had done the study in previous occasions had anxiety in 62%. Identifying the initial extension of the illness (staging cancer) was considered, with statistically significance, the most anxious situation.
Conclusion: PET-CT as an staging cancer imaging study, or as an study to evaluate a tumoral recurrence, generate anxiety. PET-CT has a positive impact on the level of the patient anxiety.

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ONCOLOGISTS' COMMUNICATIVE FEATURES TO MOTIVATE PEOPLE IN EARLY CANCER DETECTION

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Background: Early cancer detection must be an important exam for professionals to seek the ways of its realization.
Objective: To study oncologists' communicative features and abilities to apply an intelligible language in motivation the public to visit a doctor shortly to be inspected for cancer.
Results: The lack of suitable information related to cancer that is still observed in Russia gave us an idea to reveal doctors' attitude to communication with people via today's sufferers. Our volunteers, who had had own difficult experience of a long way into the unknown to survival, asked cancer patients to fill in a feedback form answering what they thought about their interaction with specialists before confirmation of diagnosis and after that. We showed that oncologists were not available enough to clarify a benefit of early cancer detection among healthy population. In case of malignancy they were not responsive in communicating to maintain patients' readiness to be their partners in the curative process. The majority of doctors did not spread knowledge about screening for cancer and separated themselves from people not using the gain of mass media to talk constructively. For patients oncologists were more imperative than explanatory. This often frightened people and psychologically did not promote premature coming for examination.
Conclusions: Oncologists should utilize every appropriate method to motivate people in early detection of cancer. This could be assisted by educating professionals to remove barriers between them and the public.

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TRANSITORINESS—A CONCEPT

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Background: The realization of life's transitory nature, i. e., 'transitoriness', is an experience that patients who are diagnosed with cancer may have. Transitoriness constitutes a challenging situation for cancer patients, their relatives, and healthcare professionals. Although issues regarding life's finitude and associated outcomes have been described in related concepts such as death awareness, the concept of transitoriness remains vague. This paper will present attributes, outcomes, and antecedents of this concept.
Review methods: Rodgers' (2000) evolutionary concept analysis was utilized to explore the concept of 'transitoriness', which requires the review of at least 20% of the identified relevant publications. A total of 239 articles were identified as being relevant. Of this total number, 27% (66 articles) were selected, reviewed and analyzed.
Findings: Three main themes emerged that describe the concept of 'transitoriness'. They were 'awareness of life's finitude', 'anxiety' and 'change'. On the one hand, the confrontation with life's finitude provokes existential fear and anxiety in the person. On the other hand, persons have the possibility of re-assessing their life situation. Thus, they can identify and explore new avenues for coping.
Conclusion and clinical relevance: The identification of the attributes of 'transitoriness', i.e., awareness, anxiety, and change, will help clinicians to better understand cancer patients' experience of their illness situation. It will also be possible to better support cancer patients in their coping process. Research that can foster the development of interventions that can enhance patients' healthcare experience will be promoted.

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EVALUATION OF A NOVEL PATIENT-RELATED RISK FACTOR FOR DELAYED CHEMOTHERAPY-INDUCED VOMITING (CIV)

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Objective: Besides chemotherapy drugs, a number of factors (i.e., female gender, younger age, history of motion sickness) may be used to calculate the risk for CIV. We evaluated data with the intent of identifying a unique factor associated with delayed vomiting in patients receiving moderately emetogenic chemotherapy (MEC).
Methods: From an ongoing research study, the serotonin metabolite, 5-HIAA, and substance P (SP) were measured over a 72-hour period in 17 patients receiving MEC. All patients were treated with ondansetron plus dexamethasone according to published guidelines. None received aprepitant prophylactically. Urine 5-HIAA and serum SP values were grouped according to the development (+) or absence (−) of delayed emesis and the timing of each measurement. The data were analyzed by Wilcoxon's Rank Sum Test.
Results: Seven patients developed moderate to severe emesis; the other 10 had no vomiting symptoms. The median pretreatment 5-HIAA values were 2.85 and 6.4 in the (+) and (−) emesis groups, respectively; the median SP values for the same respective groups were 298 pg/mL and 111 pg/mL. Neither baseline neurotransmitter value was associated with delayed CIV as the between-group differences were not significant, $p=0.2046$. However, the median pretreatment ratio of SP to 5-HIAA was significantly different between the (+) and (−) emesis groups, $p=0.0281$. Notable also were the markedly different profiles in the (+) and (−) emesis groups.
Conclusions: These preliminary data suggest that an elevated pretreatment SP to 5-HIAA ratio is associated with the development of delayed vomiting with MEC. We will test this supposition prospectively.

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IDENTIFYING RISK FACTORS FOR REFRACTORY FEBRILE NEUTROPENIA IN PATIENTS WITH LUNG CANCER

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The evidence concerning the development of febrile neutropenia in patients with solid tumors remains insufficient. In the present study, we tried to identify the risk factors for refractory febrile neutropenia in patients with lung cancer. A total of fifty-nine neutropenic fever episodes associated with anti-tumor chemotherapy for lung cancer were retrospectively analyzed. We compared the patient characteristics according to their initial response to treatment with antibiotics. In total, 34 of 59 (58%) episodes demonstrated a response to initial antibiotics, while 25 of 59 (42%) were refractory to treatment. Multivariate analysis demonstrated independent risk factors for refractory febrile neutropenia with lung cancer. These risk factors were the severity of febrile neutropenia (OR, 6.11; 95% CI, 1.85–20.14) and C-reactive protein (CRP) more than 10 mg/dl (OR, 4.39; 95% CI, 1.22–15.74). These factors could predict outcome for patients with lung cancer who develop febrile neutropenia and have a merit for selective initial antibiotics.

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TAURINE IN LUNG CANCER

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Objectives: Taurine is an amino acid which is not incorporated into proteins but found mostly unbound or bound to small peptides. Evaluation of taurine as a non-specific biomarker of various diseases such as liver damage induced by paracetamol and carbon-tetrachloride, muscle necrosis, myocardial infarction, stroke, etc, and increase in taurine release from a hyposmolar human lung epithelial cancer cell line have already been studied.
Methods: Thirty patients, suffering from lung cancer, recruited for the study after fully informed written consent. Five milliliters of venal blood samples were taken on every visit to the clinic (3 samples in total). Five milliliters blood samples were also taken from 30 healthy volunteers as a control group. Plasma taurine concentration was determined by a developed HPLC method with fluorescence detection. Mean plasma concentration of taurine and its changes during the treatment in both groups were compared statistically using student t-test and one-way ANOVA test respectively.
Results: There was no significant difference between the mean concentration of taurine in the patients and the control group ($P > 0.05$). Meanwhile, the plasma concentration of taurine increased from 4±0.6 mg/L to 6.1±0.8 mg/L during the treatment. However, this change was not significant ($P > 0.05$).
Conclusions: Regarding the results, unlike the study showed increase in taurine release from human cancerous lung cells, it could not be evaluated as a biomarker probably because of malnutrition and lack of taurine intake in these patients.

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EVALUATING THE QUALITY OF LIFE OF WOMEN WITH BREAST CANCER DURING CHEMOTHERAPY TREATMENT

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Objective: To evaluate the quality of life (QoL) of women with breast cancer. The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) and the breast cancer supplementary measure (QLQ-BR23) were applied to women before starting chemotherapy, in the middle and at the end of treatment.
Methods: Women who started neoadjuvant or adjuvant chemotherapy, for the first time for breast cancer treatment, were eligible. They were followed-up in the Mastology Outpatient Clinic of the Obstetrics and Gynecology Department of the *Hospital das Clínicas* of the University of São Paulo at Ribeirão Preto Medical School, Brazil.
Results: 79 women with breast cancer were evaluated. The average age of the participants was 49.3 years, mostly married (60.8%), white (79.7%) and 40.5% who did not complete primary education. It was observed that regardless the neoadjuvant or adjuvant treatment, Functional Body Image Scale and Symptom Scale of the Arm and Breast had bad results even in the beginning, middle and at the end of treatment. Regarding quality of life, the global measure of health, physical function and role performance decreased during treatment, indicating deterioration in quality of life.
Conclusion: Results indicate the need for the elaboration and implementation of protocols for nursing care and health education, in order to assess adverse events and implement their appropriate management.

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THE OBSERVATIONAL OF HEMODYNAMIC DURING CHEMOTHERAPY IN SUDANESE CHILDHOOD WILM'S TUMORS (NEPHROBLASTOMA)

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Background: Cancer among Sudanese citizens has been rapidly rising since 1999 till this year and at least 80% of all patients undergo chemotherapy will develop anemia as a complication of these drugs.
Aim: To publish the Sudanese Childhood Hemodynamic observations during various regimen of Chemotherapy in Wilm's Tumors.
Settings and design: A hospitalized analytical comparative study done in the major specialized medical Radiation and Isotope Center Khartoum (RICK).
Materials and methods: Thirty patients diagnosed of having childhood solid Wilm's tumors admitted from June 2006 to September 2008. Ninety blood samples were collected to examine the possible association between anemia and the chemotherapeutic regimen. All study groups (30 cases) were included in each arm of chemotherapy regimen.
Results: Prior treatment pre cycle I; 50% of patients were normal, 43.3% with mild anemia and 6.7% were had a moderate anemia. Post cycle I treatment; the normal were declined to only 6.7% and mild anemia were the highest percentage 60% followed by 30% for moderate anemia and 3.3% showed sever anemia. Post cycle II no patient's

showed normal mild anemia was 26.7% and the majority of patient's about 73.3% had moderate anemia.
Conclusion: A correlation of hemoglobin values after completion of therapy to overall treatment was found as a decline in range of (1 to 2 g/dl).

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QUALITY OF LIFE OF BREAST CANCER PATIENTS MEDICATED WITH ANTI-ESTROGENS, 2 YEARS AFTER ACUPUNCTURE TREATMENT: A QUALITATIVE STUDY

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Objective: The aim of this study was to examine the quality of life of breast cancer patients medicated with estrogen antagonists, two years after having acupuncture treatment for hot flashes.
Methods: Our sample was taken from women who had recently participated in a randomized, controlled trial investigating the effects of acupuncture on hot flashes, a side effect of estrogen-antagonist treatment. Eighty two women, who had 2 years previously received either 15 traditional acupuncture or sham (minimal) acupuncture treatments, were asked to answer an open question. "Would you like to share your thoughts and experiences related to your breast cancer diagnosis, treatments or anything else?" By being open, broad and non-specific, the question was intended to stimulate subjective information, not included in the original quantitative study.
Results: Most women were troubled by two or more side-effects due to anti-estrogen medication, negatively affecting their life quality. Symptoms included hot flashes, sleep problems, muscle and joint pain, arm edema, fatigue, weight gain, depression, and lack of sexual desire. Women previously treated with sham acupuncture still complained of hot flashes, those previously treated with traditional acupuncture found them less of a problem and generally had a more positive outlook on life.
Conclusion: Side-effects due to anti-estrogen treatment seriously affect the quality of life of breast cancer operated patients.

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ACUPUNCTURE FOR THE TREATMENT OF HOT FLASHES IN BREAST CANCER PATIENTS, A RANDOMIZED, CONTROLLED TRIAL

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Objectives: The object of this study was to investigate the efficacy of acupuncture in women with breast cancer suffering from hot flashes, as a result of anti-oestrogen medication.
Methods: In a prospective, randomized, controlled trial, 90 women suffering from hot flashes following breast cancer surgery and adjuvant oestrogen-antagonist treatment (Tamoxifen) were randomized to either 10 weeks of traditional Chinese acupuncture or sham acupuncture. Mean number of hot flashes day and night were recorded prior to treatment, during the treatment period, and for 12 weeks following treatment. A validated health score, (Kupperman index) indicating health related quality of life, was conducted at baseline, at the end treatment, and at 3 and 24 months post treatment.
Results: During treatment mean number of hot flashes day and night was significantly reduced by 50 and 60% respectively in the acupuncture group, and further reduced by 30% day and night during the next 12 weeks. A significant hot flash reduction of 25% at night was seen during treatment in the sham group, but was reversed at 12 weeks. No reduction was seen in the daytime. Kupperman index was reduced by 44% during treatment in the acupuncture group, and maintained 12 weeks after treatment ended. No corresponding changes were seen in the sham acupuncture group. Kupperman values for both groups 2 years post treatment are currently being calculated.
Conclusion: Acupuncture seems to provide effective relief from hot flashes in women operated for breast cancer, treated with Tamoxifen. This treatment effect coincides with a general health improvement.

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PAIN NATURE AND PREVALENCE IN PALLIATIVE CARE

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Objectives: Pain is one of the major complains of cancer patients. It presented an interest to study nature and prevalence of pain in cancer patients.
Methods: Pain definition and visual analogic scale (VAS) were employed to determine pain nature and prevalence based on a cross-sectional study (838 randomly selected patients), a case series study (1661 cancer patients) and a survey on cancer pain treatment management (638 cancer patients), carried out in the palliative care clinic in 2005–2009. x^2 test was used for statistical significance of the results.
Results: In a cross-sectional study pain prevalence was 87.1% and the mean point of pain composed 5.5 by VAS. A survey on cancer pain treatment management showed that the most characteristic symptoms were asthenia (85.1%)

and pain (78.5%). Pain symptom frequency was in linear correlation with ECOG, rising to 85.3% at the cancer incurable stage (IV). In a case series study of 1661 advanced cancer patients 1494 (90,0%) presented pain. The mean point of pain was 5,7 by VAS. The difference in pain prevalence was statistically significant. Over a half of the patients at early stage of cancer 58,0% presented with nociceptive pain but along with the advancing of cancer process mixed pain was rising from 3–5% to 30–35%.
Conclusion: Pain prevalence raged from 78.5% to 90.0%. Nociceptive pain was a major symptom at early stage while mixed pain dominated at incurable stage. Pain prevalence varied significantly by patient population and study design. Pain nature was likely to be dependant upon cancer stage.

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CAPECITABINE AND CETUXIMAB: WHO'S RASH IS THIS?

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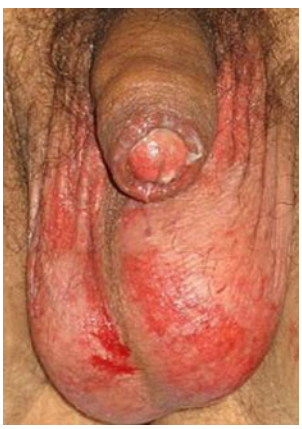
Objectives: To present a serious and uncommon chemotherapy cutaneous toxicity case.
Case report: F.N.F.S., male, 53 years old, ECOG PS 0, with sigmoid adenocarcinoma stage II, diagnosed in 2005, treated with surgery and Capecitabine as adjuvant chemotherapy, prooving good tolerance.
Due to loco-regional recurence he restarted chemotherapy with Capecitabine (with dose reduction), Oxaliplatin and Bevacizumab, then changed to Capecitabine, Irinotecan and Cetuximab because of progression.
In the 2nd Capecitabine-Irinotecan cycle/5th Cetuximab cycle, the patient developed acneiform rash grade I, angular cheilitis grade III, erythrodysestesia grade II, (all v.3.0), and genital desquamation, with superficial ulcers and pain (figure 1).



[Figure1]

Chemotherapy was stopped and the patient was successfully treated with suportive care measures, including antibiotherapy, corticotherapy, antiseptic and emulient solutions, and anti-inflamatories with the dermatology's orientation, what permited him to restart chemotherapy, without capecitabine, due to total recovery and no further reactions.
Conclusion: The desquamative lesions suggests Capecitabine's toxicity once the lesions didn't recur after discontinuing it. However, we can't definitely prove that the association with cetuximab had nothing to do with it.
Serious and less common toxicities should promote team work with other Specialties.

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LOW ENERGY LASER AS TREATMENT OF MUCOSITIS: DIFFERENCE IN EFFICIENCY IN SUBGROUPS OF PATIENTS WITH SOLID TUMORS: A PILOT-STUDY

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Objectives: To assess difference in effectiveness of lel in patients with chemotherapy, radiotherapy or concomitant radiochemotherapy in a prospective non-randomized pilot-study.
Methods: 42 patients were evaluable for analysis. 29 patients received only chemotherapy (20/29 breast cancer) (Group 1); 9 received only radiotherapy for a head and neck cancer (Group 2) and 4 patients concomitant radiochemotherapy for a head and neck cancer (Group 3). 22 patients were female, median age was 57 years. Response was assessed using the WHO-scale for grading of mucositis and a segmented visual analog scale (VAS) for pain evaluation.
Results: Group 1 recieved a median of 3 laser sessions, they had a mucositis grade 3 in 17,2% and a grade 4 in 6.9%. A severe pain was noted in 27.6%. Group 2 recieved a median of 7 laser sessions, they had a mucositis grade 3 in 44.4% and grade 4 in 33.3%. Severe pain was noted in 33.3%. Group 3 recieved a median of 13.5 laser sessions, a mucositis grade 3 in 25% and a grade 4 in 75% of all patients. A significant decrease in mucositis was obtained in Group 1 for 66.2%, Group 2 for 41.2% and in Group 3 for 31.5%. A significant decrease in VAS for Group 1 for 76.7%, Group 2 for 49.4% and Group 3 for 49%.
Conclusion: Use of lel is most useful in patients with chemotherapy alone, however a positive effect on grade of

mucositis and pain score is noted for patients treated with radiotherapy alone or concomitant radiochemotherapy.

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RANDOMIZED TRIAL OF TAI CHI CHIH IN ELDERLY BREAST CANCER SURVIVORS ON QUALITY OF LIFE AND PHYSICAL FUNCTIONING: INTERIM OUTCOMES

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Objective: Cancer is a chronic stressor as many cancer survivors experience diminished mental-health and physical-health related quality of life (QOL) as well as other adverse health effects for years after treatment is completed. This pilot randomized controlled trial aimed to determine the preliminary efficacy of Tai Chi Chih (TCC), a westernized version of Tai Chi, in improving mental and physical-health QOL and physical functioning in elderly breast cancer survivors and to help refine the protocol for future larger trials.

Methods: Thirty-two female breast cancer survivors (Stages I–III) aged 60 years and older (mean=70 years; SD=7.7) were randomized to participate in TCC or a Health Education Control (HEC) group for 60 minutes, three days a week for 12 weeks. Questionnaire and physical functioning (i.e., Senior Fitness Test) data were assessed at baseline and 1 week post-intervention.

Results: The 13-week retention rate was very good (87%); 90% and 87% in the TCC HEC groups, respectively. The TCC group made significant improvements (change from baseline in the TCC group vs. change from baseline in the HEC group) in upper body flexibility ($p<0.001$) and in the role-physical scale of the SF-36 ($p=0.04$). Unexpectedly, the HEC group made significant improvements in mindfulness (awareness $p=0.02$). There were no differences between the two groups with regard to mental health-related QOL.

Conclusion: Our pilot trial's interim findings provide promising support for the feasibility of the TCC program for producing health benefits for elderly breast cancer survivors.

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PAIN REDUCTION WITH DENOSUMAB IN GIANT CELL TUMOR OF BONE (GCTB): INTERIM RESULTS FROM A PHASE 2 STUDY

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Introduction: GCTB is characterized by RANKL-mediated bone destruction. Symptoms include localized tenderness, swelling, and often severe, intractable pain. In a previous phase 2 GCTB study, 86% of patients responded to the RANKL inhibitor denosumab.

Objective: We report interim 12-month data from a second phase 2 study, describing denosumab effects on GCTB pain.

Methods: Adults and skeletally mature adolescents with GCTB received subcutaneous denosumab 120 mg every 4 weeks (loading doses on days 8 and 15). The Brief Pain Inventory (BPI) Short Form (0–10) was administered before each dose. Patients treated for ≥6 months, with ≥1 BPI assessment ($N=99$), were included in analyses of the proportion of patients with clinically meaningful reduction in worst pain (≥2-point decrease in patients with baseline BPI score ≥2 points), proportion of patients with no/mild worst baseline pain reporting moderate/severe worst pain (>4 points), and change from baseline in analgesic score (0 [no analgesics]-7 [strong opioids]).

Results: Clinically meaningful reduction in worst pain was reported within 1 week of first treatment for 32% (19/60) of patients; 66% (36/55) of patients had clinically meaningful reduction in worst pain at week 9. Through week 61, ≤22% of patients with no/mild pain at baseline reported moderate/severe pain (>4 points). Mean analgesic score change from baseline by visit remained constant over time, ranging from −0.2 to 0.1 (median 0.0; Q1, Q3 0.0, 0.0).

Conclusions: In this interim analysis, denosumab use in GCTB was associated with clinically meaningful reduction in worst pain and prevention of worsening pain, without increased analgesic use.

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CANCER FATIGUE: DOES FOREARM MUSCLE MASS AND HANDGRIP CORRELATE WITH FATIGUE SEVERITY?

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Introduction: A "catastrophe" fatigue theory has muscle exhaustion and ATP depletion as the main mechanism. It is also hypothesized that a brain "central governor" controls muscle activity and that the a central brake prevents loss of homeostasis. The governor "set point" may be altered by illness. Bioelectrical impedance (BIA) estimates of muscle mass are validated against MRI measured muscle mass. Muscle mass is inversely related to impedance (Z) and directly related to the muscle area (L^2).We hypothesized that the relationship between maximum handgrip strength, segmental forearm muscle mass (L^2/Z) and fatigue is altered in cancer-related fatigue (CRF).

Method: 20 individuals, 10 healthy controls and 10 with CRF were studied. Data collected was: BFI, handgrip x 4 (dominant arm), and forearm BIA impedance.

Results: The median total BFI score was 18 for controls and 45 for CRF. In those with CRF relative to healthy controls there was a poor correlation between BFI and forearm muscle mass, between handgrip strength and BFI, and handgrip strength and muscle mass (Figures, red, healthy controls; blue, CRF)

Discussion: This pilot study demonstrated in those with CRF a poor correlation between handgrip strength, forearm muscle mass and fatigue severity which differed from healthy controls. This suggests that the "central governor" which controls muscle activation is altered in CRF and that fatigue is unlikely to be arising from reduced muscle mass (peripheral fatigue).

Conclusion: Fatigue severity in CRF is unrelated to muscle mass and handgrip strength.

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DOES MIRTAZAPINE IMPROVE QUALITY OF LIFE AND SYMPTOMS IN ADVANCED CANCER?

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Introduction: Anorexia, anxiety, fatigue, insomnia, nausea, weight loss, and reduced quality of life are common in advanced cancer. Mirtazapine, a norepinephrine and serotonergic antidepressant, increases weight, reduces nausea, depression and anxiety. We assessed the benefits of mirtazapine on quality of life.

Method: Cancer patients entered the study if quality of life (QOL) scores on the EORTC-QLQ-C30 Likert Scale were 5 or less (1 poor QOL, 7normal). Secondary outcomes by the EORTC-QLQ-C30 Likert Symptom Scales were anorexia, anxiety, depression, fatigue, insomnia, nausea and pain. Improvement of 1 point in QOL and/or symptom score defined response. Mirtazapine doses were 15 mg for 7 days, increased to 30 mg if no response. Patients evaluable for response completed 7 days of a 2 week trial. Toxicity was evaluable by categorical scale (1–5). A minimal 33% response rate would be need for mirtazapine to be appropriate for randomized trials.

Results: 36 completed 1 week and 23 completed 2 weeks. Only 8% had improved QOL. Of symptoms, only anxiety (33%; 95% CI 21–47%) and insomnia (33%; 95% CI 21–47%) met response targets. A significant number dropped out mainly due to sedation. Increasing doses did not improve responses.

Discussion: Mirtazapine does not improve QOL and marginally improves insomnia and anxiety. Attrition was significant due to sedation. Mirtazapine appears to be tolerated less well by individuals with advanced cancer than normal populations.

Conclusion: Mirtazapine does not improve quality of life and marginally improves anxiety and insomnia.

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MUSCLE FATIGUE CHANGES BICEPS BRACHII MUSCLE TWITCH FORCE PROPERTIES IN HEALTHY CONTROLS BUT NOT IN CANCER RELATED FATIGUE (CRF)

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Introduction: Patients with cancer-related fatigue (CRF) experience greater central nervous system fatigue (compared to healthy controls) during a prolonged voluntary motor task (Yavuzsen et al. *J Pain Symptom Manag*, 38:587–96, 2009). Based on this finding, we hypothesized that CRF patients would endure less *muscle* fatigue indicated by fewer changes in twitch force properties of muscle after voluntary muscle fatigue.

Method: Ten patients with advanced solid cancer and significant CRF and 12 age-matched healthy controls

performed a sustained isometric elbow flexion contraction of the right arm at 30% maximal level (S30) until self-perceived exhaustion. The biceps brachii (BB) muscle was stimulated by applying single maximal-intensity electrical pulses onto skin surface overlying the muscle and the evoked twitch force (TF) was measured by a force transducer before and immediately after S30. Peak TF, rate of TF development, contraction time (CT, from initiation to peak of TF), and half relaxation time (HRT, from peak to 50% peak TF) were quantified.

Results: Peak TF, CT, and HRT decreased significantly ($P < 0.05$) in healthy controls but these parameters remained the same after vs. before S30.

Discussion: Because no voluntary muscle activation was involved with the electrical stimulation-evoked muscle contraction, the measured TF parameters were pure muscle responses and their changes after S30 reflect effects of muscle fatigue. Minimal reductions in peak TF, CT and HRT in CRF patients suggest insignificant muscle fatigue in these individuals.

Conclusion: Task failure in CRF patients is caused more by central fatigue and less by muscle fatigue.

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NOVEL MARKERS FOR EARLY DIAGNOSIS OF LIVER PRENEOPLASTIC CHANGES IN RATS

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Hepatocellular carcinoma (HCC) accounts for 80% to 90% of primary liver cancer and it is a major health problem worldwide, it is the fifth most common cancer in the world. In the present study we aimed to explore new or highly related rapid and sensitive markers for early diagnosis of hepatocellular premalignant changes. Two groups of rats were used in this study as results showed that group intoxicated with TCA (trichloroacetic acid which affects liver as a primary target tissue for induction of cancer) compared to control one induced a significant increase in ALT, AST and ALP activities, also in plasma total bilirubin, triglycerides, serum total glycosaminoglycans, alpha-fetoprotein, and acetyl CoA synthase (ACAS) activity. On the other hand, it induced a significant reduction in serum lipoprotein lipase activity (LPL). The histopathological results confirmed the preneoplastic changes in hepatic tissue induced by TCA. It can be concluded that the combined new three parameters (GAGs level, LPL and ACAS activities) can be added as new markers for early diagnosis of hepatocellular carcinoma and elevate the sensitivity and specificity of AFP.

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EFFICACY OF OXYCODONE/PARACETAMOL FOR PATIENTS WITH BONE-CANCER PAIN: A MULTICENTER, RANDOMIZED, DOUBLE-BLINDED, PLACEBO-CONTROLLED TRIAL

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Objective: Bone-cancer pain is the most common and most refractory cancer pain. Opioids, on their own, do not control this type of pain well enough, and co-analgesics are necessary.

Methods: Patients with bone metastasis-related pain at Numeric Rating Scale (NRS) ≥4 were enrolled to this randomised placebo-controlled trial. They had also received morphine or transdermal fentanyl patches for at least one week. During the 3-day efficacy phase, patients received placebo or 1–3 tablets of oxycodone/paracetamol (5/325 mg), four times daily for 3 days. All patients kept a daily pain diary. The primary endpoint was the Pain Intensity Difference (PID). Secondary endpoints were cases of breakthrough pain and rescue morphine consumption. Additional analyses included the Short Form-6 Dimensions (SF-6D) quality-of-life scale and a general impression (GI) of patient satisfaction with treatment at the end of the phase.

Results: Of the 246 patients in the intent-to-treat (ITT) set, 89.4% completed the 3-day efficacy phase. PIDs were 0.9 and 0.3 in the oxycodone/paracetamol and placebo groups respectively, on Day 1 ($P<0.001$) and 1.5 and 0.3 respectively, on Day 3 ($P<0.001$). Thirty-eight patients in the treatment group, and 58 in the placebo group, suffered breakthrough pain on Day 3 ($P<0.001$). The SF-6D score decreased to 21.2±2.5 in the oxycodone/paracetamol group at the end of the phase ($P=0.001$). In the oxycodone/paracetamol group, 67% rated GI as good, very good, or excellent. **Conclusion:** Patients with bone-cancer pain, already on opioids, obtain clinically important, additional pain control, with regular oxycodone/paracetamol dosing.

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BENZODIAZEPINE USE: FINDINGS FROM 1000 CONSECUTIVE BREAST CANCER SURVIVORS

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Background/objective: Unintentional poisoning from sedatives and hypnotics has increased 65% in recent years. Frequently prescribed for anxiety, benzodiazepines are often the culprit, despite alternative treatments such as selective serotonin receptor inhibitors and counseling. Approximately 3% of the general population chronically uses benzodiazepines. Based on previously-reported high rates of anxiety among cancer survivors in general and based on the incorporation of benzodiazepines into chemotherapy antiemetic guidelines (as used in breast cancer adjuvant chemotherapy), we hypothesized that benzodiazepine use would be higher among breast cancer survivors.
Methods/results: In this single-institution study, 1000 consecutive medical records of breast cancer survivors, no longer receiving chemotherapy, were reviewed. 7.9% (95% confidence interval: 6.2%, 9.6%) were being prescribed benzodiazepines. The median interval from breast cancer diagnosis to last prescription (range) was 14 years (1, 51 years). Sixty-eight were cancer-free at last visit, and 51 had not taken benzodiazepines prior to their cancer diagnosis. Lorazepam (43) was most commonly prescribed, followed by diazepam (13), alprazolam (10), clonazepam (10), oxazepam (1), temazepam (1), and triazolam (1). Anxiety (34) was the most frequent reason for initiating and continuing benzodiazepines. Other reasons were insomnia (12), muscle spasms (6), restlessness (5), dyspnea (3), nausea (2), tremor (1), seizures (1), depression (1), or unknown (24).
Conclusions: This single-institution study observed that a notable percentage of breast cancer survivors are prescribed benzodiazepines and that anxiety is a common reason for doing so. Future studies might focus on how best to reduce anxiety and benzodiazepine use in breast cancer survivors.

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ICELANDIC CANCER OUTPATIENTS: PSYCHOLOGICAL DISTRESS, COPING STRATEGIES, LOCATION AND GENDER

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Objectives: To describe and compare distress and coping between genders, age groups and between place of residence in cancer outpatients receiving treatment. A further aim was to illuminate patients' experiences of getting cancer.

Methods: Both quantitative and qualitative methods were used. Patients (n=217), age 22–91, from three oncology outpatient clinics in Iceland, were assessed with the Brief Symptom Inventory (BSI 18) and The Ways of Coping-Cancer Version (WOC-CA). Twenty five of those patients were interviewed (mean age 55 years) to capture the fundamental meaning of having cancer and going through treatment.
Results: Women had significantly higher scores on psychological distress compared to men, they also used social support, behavioural and cognitive escape-avoidance strategies significantly more often than men. Significant differences were found in depression and anxiety between the age group (22–45) and the age group 70+. Living alone, behavioural escape-avoidance and distancing were factors shown to be significantly associated with psychological distress. The diagnosis of cancer was a shocking experience followed by uncertainty and fear. It was important to accept the situation and to deal with this challenge like any other task with a positive mind. Caring encounters, trust and a good relationship with doctors, nurses and other members of the health care personnel were the most important factors.
Conclusion: Psychological distress differs between genders and age groups. Coping strategies differs between genders and can influence distress. Care and consideration for the patient were powerful factors on patients' sense of well being and their attitudes regarding treatment outcome.

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THE USE OF PARENTERAL NUTRITION (PN) IN CANCER PATIENTS

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The use of Parenteral Nutrition (PN) with advanced cancer patients has sparked ethical discussions around the appropriateness of its use. The decision making process and the treatment plan with respect to PN is often difficult and influenced by individual situations, knowledge, as well as cultural and ethical issues.
Due to challenges encountered, we were motivated to establish a PN Working Group as a sub committee of the Palliative Care Working Group at BC Cancer Agency. Our purpose was to develop a tool that would be useful in guiding Health Care Providers with clinical decision-making regarding the initiation, continuation and discontinuation of PN for advanced cancer patients. Members of our interdisciplinary team included physicians, clinical dietitians, clinical pharmacists, clinical nurse leader, social worker and advanced practice nurses.

A Supportive Care Guideline was developed for the use of PN that identified three indications when PN may be considered. The indications included: PN as support for acute toxicity; PN as a bridging modality and PN as support for advanced cancer patient not receiving further active treatment who would be candidates for home PN.
A plan of care for PN should reflect informed and shared decision-making. To achieve this we incorporated the seven steps to discussing treatment options from the literature into the guideline.
We identified the challenges that we as health care providers encounter around the use of PN, developed guidelines outlining the appropriate indications for use including the decision making process and planned for the education, implementation and evaluation of the guidelines.

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PALLIATIVE CANCER CARE IN A SYSTEM OF PROVIDING OF HEALTH CARE IN HRADEC KRÁLOVÉ REGION: OWN EXPERIENCE

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Palliative cancer care is an active treatment and nursing interventions among patients with end-cancer therapy in the hospital instable due to progression of cancer. The main aim of palliative cancer care is to ensure the best possible quality of life of cancer patient and the patient's family members. Palliative cancer care is provided in two basic forms, general and specialized. In the article, authors dealing with palliative cancer care and its implementation into clinical practice with reference to their own experience in providing this care. Supported by the Research Project of the Ministry of Health of the Czech Republic No. 00179906 and the Specific University Research of Charles University in Prague No. 53251.

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PSYCHOLOGICAL DISORDERS AMONG PALLIATIVE CANCER CARE FEMALE WITH GYNECOLOGICAL CANCER: OWN EXPERIENCE

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Cancer diagnosis and treatment often produce psychologic stresses resulting from the actual symptoms of the disease, as well as perceptions of the disease and its stigma. Depression is seen in many cancer patients. It occurs in approximately 25% of the palliative care patients. Cancer, exclusive of the site, is associated with a rate of the depression that is higher than in the general population. Women diagnosed with gynecologic cancers face many complex psychological issues. These issues vary depending on the cancer, but include accommodations to changes in identity, sexuality, fertility, and quality of life. Supported by the Research Project of the Ministry of Health of the Czech Republic No. 00179906 and the Specific University Research of Charles University in Prague No. 53251.

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QUALITY OF LIFE AMONG CANCER PATIENTS IN A PROGRAMME OF PALLIATIVE CANCER CARE

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Quality of life (QOL) is defined as "a patient's subjective evaluation of his life situation". Definition of is based on Maslow's theory of needs (the need to sleep, to eat, to drink etc.). QOL term contains the information on an individual's physical, psychological, social and spiritual condition. QOL evaluation is carried out by means of generic and specific questionnaires. Generic QOL questionnaires generally evaluate a patient's overall condition regardless his disease. Specific QOL questionnaires are designed for the evaluation of a patient's overall condition in a particular type of disease. Modules are often used with these specific QOL questionnaires. These modules are focused on specific symptoms and complaints in a particular type of disease. The areas investigated in QOL questionnaires usually include: patient's physical functions, patient's psychological functions, patient's social functions, including his financial situation, his integration into the society, spiritual aspects (interests, hobbies), symptoms which are specific for a particular disease. The QOL means more dimensional evaluation of a number of life aspects. Different aspects can be affected in a different way in a different phase of the disease and its therapy. That is why this information enriches our knowledge concerning patient's needs and it can significantly contribute to the medical treatment improvement. It can also help us to reveal the mechanisms which modify the origin and the course of disease. Supported by the Research Project of the

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THE RELATIONSHIP BETWEEN ADIPOSITY AND CANCER

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Introduction: The objective of this study was to determine the prevalence of overweight and obesity,in the patients with cancer and the relationship, by age and gender in Vlora, a city in Albania.
Methods: The study in hospital of Vlora was carried out between January 2007 and januar of 2010.
The total study involved 274 patients, 140 women and 134 men, mean age 20–70 years whose height and body weight were evaluated.
They were diagnosed with Cancer and were tested in addition to anthropometric evaluations.
Each survey comprised a general practitioner, a nurse and a medical secretary. Body weight and height were measured and is classified according to BMI value.
All statistical analyses were performed for women and men separately
Results: Noted a connected of obesity with specific types of cancer, Ca renalis 50% of cases were obese, 66.6% Ca uteri of cases, 66.6% Ca ovary obese, Ca coloni, obese 50%, abdominal Ca, obese 55.5%, Ca cutis, obese 14%, Ca cerebri, obese 20%, Ca hepari, obese 50%, Ca gl Mama obese 60%. While thyroid Ca, Ca prostate, Stomach Ca, Ca mezenkimal, johodginiane lymphoma, metakockore (middleborn) without primary focus, nasofarings Ca, Ca esophagus,Ca pneumonia, there was no link between obesity and cancer.
Conclusion: The prevalence of obesity, in patients with Cancer is considerable and changes regarding age and gender.

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PROSPECTIVE SUBJECTIVE EVALUATION OF SWALLOWING FUNCTION AND DIETARY PATTERN IN INDIAN HEAD AND NECK CANCER PATIENTS TREATED WITH CONCOMITANT CHEMO-RADIATION

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Methods: 47 head and neck cancer patients prospectively evaluated for swallowing function Performance Status Scale for Head Neck Cancer (PSSHN) at pre and post treatment with dietary pattern and weight.
Results: In 47 patients (40 male,72% smoker, 53% oropharynx) mean total PSSHN score at pre-CRT was 258.5 and decreased to 225.2 and 219.2 at 2,6 months respectively. However, understandability of speech, normalcy of diet and eating in public at pre-CRT and 6 month were 91.5 and 84.4; 80.4 and 63.1; 87.3 and 76.6 respectively. Univariate analysis had shown that pre-CRT PSSHN scores were lesser with severe pre-CRT dysphagia (grade-3–6) ($p=0.001$), hypopharyngeal cancer ($p=0.244$) and advanced (T3/4) disease ($p=0.144$). However no significant difference in PSSHN scores with nodal disease burden ($p=0.256$) or overall AJCC stage ($p=0.313$). There was significant reduction of PSSHN scores at CRT completion with severe pre-CRT dysphagia ($p=0.008$), post-CRT weight loss (>10%) and with disease progression ($p=0.039$). Also smokers, smaller tumours (15 cm^2), longer treatment time (>48 days) and post-CRT severe mucositis had comparatively higher reduction in PSSHN score after CRT, though not statistically significant.
At 2 and 6 month, 17 (57%) and 11 (73.5%) patients respectively had change in dietary habit to semisolid or liquid food. However, only 27% required feeding tube at 2 month post-CRT.
Conclusions: Majority patients have deterioration of swallowing function after CRT with normalcy of diet in maximum and eating in public least affected. Post-CRT diet conversion was observed in majority of the patients. Weight loss was highest in immediate post-CRT period.

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PERSPECTIVES OF HEMOSORBTION APPLICATION FOR TREATMENT OF CANCER PATIENTS WITH SEPSIS

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In our center we have experience of application of some devices for hemosorbtion as specific LPS-adsorber as non selective and non specific column for extracorporeal detoxification of patients with sepsis.
The blood serum of 23 cancer patients was taken before and after adsorption by LPS adsorber (Alteco, Sweden), Adsorba (Sweden), Toraymixin (Toray Ind., Japan). Also after the termination of hemosorbtion procedure we

investigated washouts from a sorbent of used devices. We determined the LPS, sIL-1R, sIL-6R, sTNF-RI, pro- and anti-inflammatory cytokines concentration.

A level of key trigger signal for start system inflammatory reaction (LPS) in blood decreased in 2–3 times versus control. In hemosorbent washouts it had been revealed high level of some cytokines (IL-6, IL-8, IL-12, INFγ and TNFα). At the same time in most cases we found not statistically significant changes of serum cytokine levels during hemosorbtion. Possibly it is caused by release free cytokines from cytokine-binding complexes. Considerable increase of soluble cytokine receptors in blood after the procedure (about in 2 times) proves this assumption. These changes of tested substances correlated with the positive clinical effect of hemosorbtion application for extracorporeal detoxification (survival of patients—96%: only 1 patient died after the procedure).

The established dates show that haemosorbents can effectively eliminate from blood a wide range of the factors mediating start, maintenance and increase of system inflammatory reaction in an organism. It is the pathogenetic basis for the hemosorbtion application for interruption of the cascade of system inflammatory reaction in patients with a sepsis.

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PROPHYLACTIC ORAL MINOCYCLINE AND TOPICAL PIMECROLIMUS ON DEMAND FOR CETUXIMAB INDUCED ACNE-LIKE RASH IN PATIENTS WITH NSCLC STAGE 3

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Cetuximab is a chimeric monoclonal antibody that binds to the extracellular domain ofthe epidermal growth factor receptor (EGFR) and has demonstrated activity in patients with metastatic colorectalcarcinoma and non-small cell lung cancer (NSCLC). Known toxicity of Cetuximab is acneiform rash. In 2008 a studywas started in patients with locally advanced NSCLC to assess feasibility and efficacy in combining cetuximab andconcurrent chemoradiation. Because of the high incidence and severity of Cetuximab induced skin toxicity a novelsupportive care protocol was developed.

Purpose: To assess the efficacy of prophylactic Minocycline and therapeutic Pimecrolimus in reducing Cetuximabinduced skin toxicity. Conceptual or Clinical Model/Philosophic or Theoretical Framework:: Evidence based guideline protocol by the DutchQuality Institution of healthcare.

Methods & analysis: Cetuximab was given once weekly for 6 weeks concomitant with daily dose Cisplatin and radiotherapy. During the first cohort acneiform rash was treated on demand while during the second cohortprophylactic Minocycline (100 mg q.d. for 45 days) was administered and if necessary topical pimecrolimus (1% b.i.d)was added. Toxicity was scored according to the common toxicity criteria for adverse events (CTCAE) version 3.0.

Findings and implications: In the first cohort 11 out of 12 patients developed acneiform rash grade 2 or 3. One patientdiscontinued treatment because of skin toxicity. In the second cohort 3 out of 14 patients developed grade 2 rash. No grade 3 was seen (P=0.001). Side effects of minocycline and/or pimecrolimus were not reported.

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UTILIZING A PHARMACOINFORMATICS TOOL FOR THE PREDICTION OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING IN ASIAN PATIENTS ON EMETOGENIC CHEMOTHERAPIES

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Objectives: A pharmacoinformatics tool was employed in this prospective, cohort study to determine its utility in identifying risk factors that are useful as predictors of chemotherapy-induced nausea and vomiting (CINV).

Methods: Asian patients on a variety of chemotherapy regimens and appropriate antiemetic treatment were recruited from January 2007–July 2010. CINV events were recorded using a CINV diary. Pharmacoinformatics analysis involved principal component analysis of 12 risk factors to differentiate patients with and without complete response (CR), complete protection (CP) and complete control (CC).

Results: 710 patients were recruited. Mean age was 52.9± 10.3 years. Majority were females (67%) and Chinese (84%). Patient proportions that achieved CR, CP and CC were 58%, 42% and 27% respectively. Five risk factors were identified as potential predictors of these endpoints. Period of alcohol drinking and history of CIV were predictive in cisplatin-based regimens, while drinking frequency and history of CIN were predictive in anthracycline-based and oxaliplain-based regimens. Fatigue interference was a better predictor than severity generally.

[Table 1]

Clinical Predictors	Percentage variation explained by clinical predictors that distinguished patients with and without CINV endpoints (%)		
	Cisplastin-based regimens (n=139)	Anthracycline-based regimens (n=361)	Oxaliplatin-based regimens (n=210)
History of alcohol drinking			
• Period (Ex-/Current drinkers)	20.6–26.0%	11.8–12.3%	13.7%
• Frequency (Social/Chronic drinkers)	N/A	17.3%	17.4–18.0%
History of CIN	4.3–5.0%	12.7–13.2%	8.3–17.0%
History of CIV	19.2–21.6%	4.7–12.8%	7.9%
Fatigue			
• Interference	10.3–12.5%	5.8–13.4%	12.2–14.9%
• Severity	5.4–10.3%	9.2–9.8%	12.9%
Gender	9.8–11.4%	N/A	11.3–11.9%

Conclusions: This study has successfully utilized a pharmacoinformatics tool to pinpoint 5 clinical predictors in patients whose CINV are not well managed. Future research should further optimize antiemetic therapies in these populations.

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EVALUATING CLINICAL COMPETENCY FOLLOWING MULTINATIONAL ASSOCIATION OF SUPPORTIVE CARE IN CANCER (MASCC) INVOLVEMENT—NAIROBI HOSPICE

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The MASCC is an international, multi-professional organization that encompasses all aspects of cancer care. MASCC is dedicated to research and education in all aspects of supportive care for patients with cancer, regardless of the stage of their disease. its offers an opportunity to its members to learn on appropriate, evidence based supportive care measures for care of the cancer patients experiencing disease or treatment—related problems, current concepts of psychosocial care and quality of life.

A team of one doctor and two nurses in Nairobi Hospice have been MASCC members and noted their various experiences since they became members as; Evidence of teamwork that has led to improved patient care, Current information and teaching on supportive care which the team is practicing with notable improvement in patient care. Networking with members from other countries including, African colleagues. Participating at the study groups, has becomes an avenue for networking internationally with colleagues who have simular interest. Academics—this is improved through the journals and information given during the conferences like CDs, journals and study groups discussions. This has led improved academic competencies since the members are mentors and tutors at their work place. The communication skills, have been obtained through the presentations both poster and oral sessions. Mentorship—the visit by one of the MASCC directors last year and the meeting held with MASCC group in the country was very encouraging.

The team is currently conducting survey to evaluate their clinical competencies and identify area of possible improvement.

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A STUDY ON DAY CARE AS ONE OF THE SERVICE PROVIDED BY NAIROBI HOSPICE IN KENYA

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Day care is one of the service being offered by Nairobi Hospice and patients/families have come to appreciate the service, this service have been described as a form of 'sensory shielding' by directing attention to something else, the patient less aware of noxious stimuli.

Goal evaluate the importance of the day care service as one of the services.

Method: A survey was developed to determine how the patients and families felt about the service. 34 subjects volunteered to complete the survey, 22 patients and 12 family members.

Results: 85% of the patients referred day care as a place to socialize, share stories, encourage each other, by seeing and

talking to others, it offers a form of distraction, which is one of the psychological method of relieving pain. They enjoy activities such as knitting, playing games, beading and singing. 15% attends once, 80% families says it gives them time to do other things and re-charge their energies to care for their loved ones and it is part of occupational and rehabilitation therapy for their patients and some borrow different coping mechanism and so doing, they feel supported and not in it alone. 10% lacked time, 10% feared their patients would not cope with group sharing. 75% patients find new friends 25% fear knowing each other, 90% families says patients are bright after day care, 10% disagree.

Conclusion: psychosocial is one of the key area in having a better quality of life and need to be addressed.

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THE INFORMATION, MYTH AND BELIEVES THAT THE PATIENT AND THE COMMUNITY HAS ON CERVICAL CANCER

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Cervical cancer is increasing in alarming manner, becoming the first killer female cancer disease in Kenya. Patients are seeking treatment when the disease is in an advanced stage; many young patients are becoming victims of cervical cancer as an early age and being referred for palliative care.

Purpose: To find out the information the patients and family knew about the early signs of cervical cancer and information.The survey was conducted at Nairobi Hospice between July 2008–January 2009. After explaining the purpose of the survey, a total of 16 subjects were given questionnaire to complete between 20–45 years old. Ten were patients; two mothers to the young patients and four spouses all presenting in advanced stage.

Results: Lack of enough information on early signs and symptoms especially the school going girls, lack of enough health providers, ignorant and early marriages in less fortune families.75% do not know what to look for while 25% can identify discharge and lower abdominal pains. 50% mothers can not talk to their girls on cervical discharge, 25% left the education to female family members while 25% left to teachers. Patients who came for treatment in late stage had knowledge but ignored earlier treatment; some referred the illness as a curse from the death, Do not talk openly on private parts especially to a male health provider.

Conclusion: Results shows good communication and education by the nurses at community level and hospitals will safe many women who could be developing cervical cancer.

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PATTERNS OF INFORMATION NEEDS AND AFFECTIVE DISTRESS FOR PEOPLE WITH HEAD AND NECK CANCER AND THEIR FAMILY MEMBERS

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Objectives: To determine the information needs of people with Head and Neck (H&N) cancer and their family members, their preferred sources of information, and links between information needs, distress and other mood disorders.

Methods: A consecutive series of 79H&N patients and 52 family members from two regionally-defined cancer services were surveyed. Measures examined information needs grouped into five domains: disease profile, treatment, management of side effects, psychosocial consequences and survivorship as well as preferred communication delivery and qualify of life. Standardised measures were used to assess mood state including distress, anxiety and depression.

Results: Patients and family members both endorsed information about disease profile as extremely important. Family members rated issues about survivorship as most important. Information received from hospital-based health professionals was rated the most helpful. Other frequently used sources were written information, other patients and the internet. The most common concerns were worry, fatigue, sleep, eating and pain. Many patients displayed moderate to severe symptoms of anxiety and depression, and information needs were correlated to anxiety but not to depression. Family members attributed a high level of importance to some information domains although there was no evidence of corresponding distress.

Conclusion: H&N cancer patients have specific needs particularly regarding physical disfigurement and functional impairments of speech and swallow. Access to timely and appropriate information can improve quality of life, enhance coping, satisfaction with care and confidence in living with cancer. Information is invaluable in supportive care in cancer and health professionals play an important role.

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CANCER PAIN MANAGEMENT IN SRI LANKA: NURSING PERSPECTIVE

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Cancer pain is a serious problem that requires specialised nursing knowledge to manage. This ethnography study explored the experiences and practices of cancer pain management among nurses at a Government Hospital, Sri Lanka. Data were collected from October 2007 to January 2008. Data consisted of participant observation of nursing practice in a cancer ward, semi-structured interviews with 10 participants and researcher diary. Analysis of data was undertaken consisted of coding data initially and an integrative process to develop categories. Findings identified Sri Lankan nurses have poor cancer pain management practice because of a lack of resources, large number of patients to care for, shortage of nurses and large workload in this hospital setting. Additionally the nurses are powerless as they have no autonomy in practice and are required to refer to medical staff for cancer pain management strategies. The nurses are stuck in a task oriented system that rarely acknowledges cancer patients' pain management needs. It is anticipated that this study may lead to improving nursing pain management for cancer patients and curriculum change in nursing courses in Sri Lanka.

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IMPACT OF PRAYER ON SPIRITUAL WELL BEING IN CANCER PATIENTS UNDER GOING CHEMOTHERAPY

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Many of recent researchers emphasis on this opinion that the human problems in the recent years is the necessarily to the religion and immaterial valuses.
God belief has an immaterial impact on the human to endure the hardness of the problems and avoid Anxiety. As praying can be a relief cure and is a motivator to physiologic response, we check the prayer impact on immaterial healthy of cancer patient under chemical remedy in this paper.
This was a Quasi-experimental study. Fourty patients who were 45–65 years old that divided to experimental and control group randomly, alert to their disease, and able to read and write participated.
In this study.In the experimental group is kept on 30 min prayer daily for 6 week.Data collection was done before and aweek after the intervention by Paloutzian&Ellisons spiritual well-Being (1982) questionnaires. Data analyisis was done by SPSS program.
Findings showed that mean scores of spiritualty well-being of experimental and control group was 69/05 and 75/4 before the intervention and grows to 101/5 and 78/6 after the test.
(Rang paloutzian&Ellison spirituality well-being ques tionnaire is between 20–120)
Spiritual well-being score comparison in experimental group before and after the test shows a significant relationship ($p=0.0001$).
Conclusion: Regarding the results it seem that praying can be helpful in improving and increasing the spirituality well-being of cancer patients undergoing chemotherapy. Nurses should consider prayer as a health promoting strategy in caring programs and choose a comprehensive and holistic approach toward their patients.

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RANDOMISED PHASE III CLINICAL TRIAL OF COMBINED TREATMENT WITH CARNITINE + CELECOXIB ± MEGESTROL ACETATE FOR PATIENTS WITH CANCER CACHEXIA

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Background: Cancer-related anorexia/cachexia syndrome (CACS) is a multifactorial syndrome characterized by loss of lean body mass (LBM), metabolic alterations, chronic inflammation and fatigue.
Patients and methods: A phase III randomised trial started in October 2009 to compare efficacy and safety of two treatments to improve the "key" variables of CACS: LBM, resting energy expenditure (REE), fatigue and physical activity (ArmBand). Secondary endpoints: grip strength, six minute walk test (6 MW), appetite, serum levels of IL-6 and TNF-α, EORTC-QLQ-C30, ECOG PS. All patients received basic antioxidant treatment and were then randomly assigned to: L-carnitine 4 g/d + Celecoxib 300 mg/d (Arm 1) or the same treatment + megestrol acetate (MA) 320 mg/d (Arm 2). Treatment duration: 4 months. Planned sample size 70 patients for each arm. An interim analysis (intent-to treat) was planned.
Results: Sixty cachectic patients (mean age 65.2±8.7 years) with tumors at different sites were enrolled and 57 were evaluable. Analysis of changes from baseline showed that LBM (DEXA and L3-CT) improved in both arms. Fatigue

improved significantly while REE and physical activity did not show significant changes. Secondary endpoints 6 MW test, appetite, ECOG PS improved significantly. The comparison between the 2 arms by ANOVA test did not show significant difference. Toxicity was substantially negligible and comparable between arms.

Conclusion: The results of the present trial confirm the efficacy of a combined approach for the treatment of CACS: arm 1, without MA, could be the treatment of choice as it was effective and easier to administer. Trial is ongoing.

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POOR ORAL HYGIENE: MAY BE THE SOLE CAUSE OF ORAL CANCER IN SIXTY RECORDED CASES IN NIGERIA

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Objectives: The purpose of this case-control study was to draw attention to the possibility that poor oral hygiene resulting from infrequent and inadequate use of chewing sticks might be the sole cause of oral cancer in sixty patients investigated in the maxillofacial units of two specialist hospitals in eastern Nigeria.

Methods: Sixty cases and sixty controls made up the study population. We matched them for age, gender, period of admission and study site. The interview of all the participants contained data on demographic factors, family history of cancer, tobacco habits, oral hygiene, dietary habits and use of alcohol. We took biopsies of the lesions for histo-pathological examination. We entered the collected data into Microsoft excel package and transported it to Stata for generation of statistical test.

Results: Poor oral hygiene due to infrequent tooth brushing was associated with primary oral cancer in this patient sample. On the other hand, frequent tooth brushing was related to healthy status.

Conclusions: In the absence of other known carcinogens, poor oral hygiene may be the single factor that caused oral cancer in these subjects. Research is needed to investigate the pathological mechanism that is associated with this risk factor.Brushing with chewing stick.

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POSSIBLE PROGNOSTIC FACTORS IN NEUTROPENIC ENTEROCOLITIS IN PAEDIATRIC ONCOLOGY PATIENTS

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Objective: Neutropenic enterocolitis (NEC) is still not well understood, the course and outcome vary widely. The clinical characteristic is a triad of symptoms; neutropenia, fever and abdominal pain. The objective of this pilot study was to identify prognostic factors in NEC to predict the clinical course of paediatric oncology patients.

Methods: This study consisted of three parts;

1) A literature search was performed within the databases Pubmed and Embase up to June 2009, the used search terms were neutropenic enterocolitis or typhlitis within oncology patients.

2) Using the identified prognostic factors found in the literature we scored paediatric case reports published from 1966–2009.3)We screened our own paediatric oncology database for patients diagnosed with NEC between 2003–2010 to score the identified prognostic factors.

Results:

1)The literature search resulted in 126 studies that could be screened and 15 studies could be included, in which 13 possible prognostic factors were identified. Most found were bowel wall thickening on imaging and neutropenia over 7 days.

2) The literature search resulted in 34 paediatric case reports. The amount of prognostic factors between survivors and non-survivors was not significantly different.

3) At our own institution 10 paediatric oncology patients were diagnosed with typhlitis. A correlation between the amount of positive prognostic factors and the severity of the course and outcome was found.

Conclusion: This was a pilot study for a prospective multicentred study to validate the identified prognostic factors. A prediction rule based on these prognostic factors can decrease morbidity and mortality in this potentially life threatening entity.

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GLOBAL HEALTH STATUS OF THE WOMEN WITH BREAST CANCER: THE PREDICTION OF HUSBAND SUPPORT AND MARITAL SATISFACTION

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Objective: Husband support and marital satisfaction could be an important factors in determining the global health status of women with breast cancer, thus, this study determines the prediction of husband support and marital satisfaction following surgery, as well as the socio-demography factors on the women's global health status after completion of adjuvant chemotherapy for breast cancer.

Method: The Inventory of Socially Supportive Behaviour (ISSB) and Dyadic Satisfaction Scale (DSS) were distributed to 157 newly diagnosed breast cancer patients at baseline (within one week following surgery). Meanwhile, the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core Module (EORTC QLQ-C30) was distributed to these women after they had completed chemotherapy (approximately 19 week following surgery). All women were recruited from the hospital located in Kuala Lumpur, Malaysia. High scores of global health (EORTC QLQ C30), ISSB and DSS indicate better global health, husband support and marital satisfaction respectively.
Result: Mean age of the women was 48.92 (±9.16) years with half of them were diagnosed with stage two breast cancer. Duration of marriage was 22.61 (±9.9) years. Regression model indicates that support from husband explained 7% of the variance of the women's global health status, however, others predictors (i.e.women and their husbands' age, marital satisfaction, duration of marriage and time from diagnosis) were excluded from the model.
Conclusion: Husband/spouses could be a source for the women with breast cancer to improve their quality of life, thus, the health professionals should actively integrating husband/spouse in their breast cancer program.

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FACTORS PREDICTIVE OF HUSBANDS' EMPATHY TOWARDS THEIR WIVES WHO HAD TREATMENT FOR BREAST CANCER

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Objectives: Spouse's understanding on patient's feeling related to illness situation is very crucial in fighting chronic diseases. Thus, this paper aims to determine the possible factors of husband's view on wife's body image following breast surgery and socio-demographic factors as predictive of husband's empathy on their wives who had adjuvant chemotherapy for breast cancer.
Methods: One hundred and fifty seven husbands of the women with breast cancer were recruited from the general and university hospital in Kuala Lumpur Malaysia. The modified version of Body Image Scale (BIS) were distributed at baseline (within one week after surgery), meanwhile the Empathy-Revised Barrett Lennard Relationship Inventory (E-RBLR) were distributed at 19 weeks after surgery. High scores of E-RBLR indicate better empathic response from spouse, meanwhile high scores of BIS represent the negative view on wife's body image.
Results: Mean age of the women was 48.92 (±9.16) with duration of marriage 22.61 (±9.9) years. Fifty seven percent (n=91) of patients were diagnosed with stage two breast cancer and 52% (n=83) were pre-menopausal. Regression analysis revealed that husbands' age explained 4% of the variance of husband level of empathy. Others variables (i.e. wives' age, duration of marriage, husbands' view on wives' body image and time from diagnosis to the participation in the study) did not predict husbands' level of empathy.
Conclusion: Health professional and counselor should take into consideration the age's of the husbands/spouses of the women with breast cancer while assessing the level of empathy of husbands/spouses.

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INTEGRATION OF PHARMACOINFORMATICS AS PART OF ONCO-CULTURE: PREDICTING CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING FROM PATIENTS' ANXIETY SYMPTOMS

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Objectives: Patients with and without CINV report different anxiety symptoms. This study utilized a novel pharmacoinformatics approach to identify anxiety symptoms that could predict chemotherapy-induced nausea and vomiting (CINV) based on a 21-item objective assessment tool (Beck Anxiety Inventory).
Methods: Asian patients on a variety of chemotherapy regimens and appropriate antiemetic treatment were recruited from January 2007–July 2010. CINV events were recorded in a CINV diary. The principal variable (PV) approach was used for pharmacoinformatic analysis of 21 anxiety symptoms to differentiate patients with and without complete response (CR), complete protection (CP) and complete control (CC).
Results: 710 patients were recruited. Mean age was 52.9± 10.3 years. Majority were females (67%) and Chinese (84%). Patient proportions that achieved CR, CP and CC were 58%, 42% and 27% respectively. Seven items (33%) were identified as clinical predictors of the CINV endpoints. 'Fear of dying' was a predictor for CINV in head-and-neck and gastrointestinal cancer patients receiving platinum-based chemotherapies. In addition, 'hot/cold sweats' was associated with head-and-neck cancer patients, while 'nervousness' and 'faintness' were mainly observed in gastrointestinal cancer patients. On the other hand, 'fear of the worst', 'numbness' and 'unable to relax' predicted for poor CINV control in breast cancer patients receiving anthracycline-based chemotherapies.

Conclusions: This study has successfully demonstrated that anxiety symptoms vary among patients who experience different cancers. They may experience different efficacy outcomes with their antiemetics. The PV approach is able to identify 7 anxiety-associated symptoms that can be clinically-relevant when assessing CINV risks among cancer patients.

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PSYCHO ONCOLOGY WORK BY NON-GOVT-ORGANISATION FOR TOBACCO DE-ADDICTION: EFFORTS IN RESOURCE POOR SETTINGS

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Objectives: Adolescents highly-susceptible to tobacco-use. Our Indian CancerNGO-team used traditional/Faith healers psychological-advantage to motivate by interventional study protocol. Aim was to reduce use of crude tobacco products.
Methods: This was PHASE-IV project. Retrospective analysis of implementation of FCTC-WHO done by Three NGO evaluation teams. Indian-district divided in seven target villages. Due representation to demographic pattern, socio-economic criteria. Total participants 260, age 14–24. Traditional faith-healers mobilised by community leaders [total 13]. Tobacco-addicts graded clinically according to consumption of tobacco, years of use. study carried over four months. Study-participants counselled for cause of using tobacco, educational & social background. Traditional faith healers conducted 11 follow up sessions during course of study.
Results: Of total 260 tobacco users 250 continued to participate. [10 dropouts].227 showed positive-attitude towards quitting tobacco use. 215 subjects has quit habit of tobacco application. 12 subjects able to abstain for short period but eventually restarted habit. Post-project surveillance showed need for community help/Rehabilitation. Of 227 who responded positively majority [220] started using tobacco due to peer-pressure [84%], imitation of tobacco advertising [11%].
Conclusions: Scientific knowledge/expertise of traditional faith healers is tribal areas controversial, TFH are only available resource for influencing adolescents. They act as channel to implement tobacco de-addiction programmes through community participation.
Recommendations: Developing nations have little resources & technologies. NGO has to carry out interventional programmes with limited resources. Traditional faith healers Can help achieve MASCC objectives in resource poor nations. for long term success strategy MASCC 2011 Symposium participants need to share experiences/difficulties in cancer control.

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COMPREHENSIVE SUPPORTIVE CANCER CARE PLAN IN RESOURCE POOR SETTINGS: NEED FOR UNIFORM PUBLIC HEALTH POLICY

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Objectives: People living with CANCER needs price discounts anti-cancer drugs, human-rights protection & proper nursing-care. Controversy is raging over euthanasia for terminal cases. These are burning issue for cancer-patients from resource-constrained countries. Appropriate public health program incorporating NGO's in supportive-cancer-care necessary.
Methods: Cost/availability of oncology drugs is debatable. Over 82% patients in rural-india cannot afford Anti-cancer-therapies, so life with cancer is granted as end-game. Since September 1996 various community initiatives implemented to reduce therapy-cost. NGO's need to facilitate development of sound/sustainable nursing-care-programs in marginalized communities. Establish Uniform public-health-policy to develop of sound/sustainable cancer-care-programs.
Results: Radiation/Drug therapy out of reach for >90% patients. Rehabilitation/palliative care plans non-existent. Concrete proposals done only by 8 NGOs, 7 governments & 2 private entities. 1 supported by WHO, 8 NGOs (56%), 2 government (6%) & 5 private entities (38%) & 1 corporate/Pharma sector initiatives. Cancer-nursing-care-services implemented together with low-cost-drugs show more positive outcome. Nursing-care in rural/tribal areas abysmal.
Conclusions: NGO participation in administration of nursing- care/therapeutic Rx very effective for cost-management, better-compliance. Community mass intervention & low-cost drug-supply-projects proven useful in resource-poor-nations. MASCC-workshop participants can collaborate with NGO-activist to address this issue. Uniform public-health-policy needed to implement supportive-cancer-care-services.
Recommendations: Promoting dialogue between health services & NGO's required. NGO-nurses participation increases more compliance. Nurses have direct-communication with patients. nurses must be involved in Public-health-policy-issues. WHO, MASCC should commo-guideline-manual on this issue affecting developing-countries at 2011-Athens symposium. complex issue like this indepth discussion at MASCC forums as step to future of cancer patients.

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TASTE ALTERATION AND ITS IMPACT ON QUALITY OF LIFE AFTER HEAD AND NECK RADIOTHERAPY

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Objectives: The aim of this study was to evaluate taste condition after head and neck radiotherapy and its impact on quality of life.
Methods: 22 patients with head and neck cancer referring to Cancer Institute of Tehran University of Medical Sciences were interviewed and examined before and after radiotherapy.
Patients were given three consecutive concentrations of sugar, salt, citric acid and quinine sulfate solutions to evaluate their taste sensation by Whole Mouth technique.
EORTC-QLQ-H&N35 was used before and after radiotherapy to assess their quality of life.
Statistical analysis were made using Wilcoxon Signed Ranks test,Spearman's Coefficient of Correlation,Paired t test,Multiple Ordinary and Multiple Linear Regressions.
Results: Significant changes were observed in concentrations and intensities of different tastes before and after radiotherapy ($P<0.001$).
All of the patients had dysgeusia after radiotherapy and 72.2% had total taste loss. Salt and bitter tastes were affected more seriously than sour and sweet. Subjective dysgeusia reported by 3/4 of the patients, which was correlated with objective taste disorder in terms of taste intensity. (Spearman's Coefficient=0.426, $P=0.048$).
Age, sex, radiotherapy total dose and fractions, and patients' education had no significant effects on taste alteration ($P=0.044$, $B=0.516$).
Quality of life was significantly deteriorated after the occurrence of dysgeusia ($P<0.001$) in both total and partial taste losers.
Age, sex, radiotherapy fractions and dosage, and patients' education had no significant effects on quality of life.
Conclusion: Radiotherapy-induced dysgeusia has negative effect on life quality.

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DO WOMEN WITH BREAST CANCER WISH FOR HEALTHY SEX LIFE ? ADDRESSING THIS SENSITIVE ISSUE IN NGO COUNSELING CLINICS

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Objectives: Cancer Surgery/Chemotherapy has improved quality of life in breast-cancer sufferers. women suffering from breast-cancer worried about healthy sex-life. In procreational sex ideas not often clear and lead to depression/suicidal behavior
Methods: In this quasi-experimental study 26 breast-cancer-sufferers offered counseling/psychotherapy. Age 14–45 years. Questionnaire responses evaluated statistically. Our Indian cancer-NGO followed these women who returned to small towns after chemo/surgery in cities. Separate evaluation-proforma given to husbands to analyze husbands-attitudes towards wife after diagnosis of breast-cancer. Due consideration given to cultural/social/educational backgrpund. patients attended 8 counseling sessions. Post-sessions behavior towards sex-life noted. Local community-health-providers included in NGO team for better-impact & larger-participation
Results: 2 patients died during study. 4 failed to complete-study due to post-chemo sickness. After counseling 18 out of 20 women improved psychologically to approach issue of sex-life. Surprisingly 11 women suggested support-group with NGO-community worker to foster relationship among communities and patients
Conclusions: Wish for health-sex-life in breast-cancer sufferers is looked as taboo in developing-world. Gender-discrimination is wide hence our cancer-NGO decided to break-silence on this burning-issue. We found that given proper counseling/psycho-social-support women can over-come trauma of breast-cancer-diagnosis. We stress concept "Its not end of Road". Disturbed sex-life can turn suicidal for such women.
Recommendations: At MASCC-2011-symposium we work together to form platform to discuss such sensitive issues. With MASCC board permission we plan to form work-group with European/American researchers to work further on this sensitive issue. Breast-cancer sufferers need support to fight against discrimination, counseling, access to treatment as supportive care plan.

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NURSES FOR CANCER PREVENTION: ECONOMICS OF RESPIRATORY CANCER PROJECTS

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Objectives: Qualifies oncologists are rarity in developing-nations. Access to care poorly addressed issue. To evaluate role of nursing-personal of resource-poor-nations. Our NGO enrolled 534 Respiratory-cancer-patients. 56% tobacco-induced. 68% taken returned to villages. 27% under palliation. 27% treatment-dropouts,

5% on chemo. Our-NGO provides economical home-care in rural-India.
Aim: Determine strategies to reduce cost in rural-India by training-nurses, its benefits to rural-community. We trained 11 nurses.
Methods: 18 NGO training workshops conducted between Dec2003 to April 2008 to assess current oncology-nursing-services & modify them to reduce cost to patients. To evaluate role of Nurse in rural-areas. To determine psychosocial needs of lung-caner-patients. Modify nurse training-module for better care of elderly-population.multi-centre-survey at 5 rural health centers conducted. Nurses work with multidisciplinary-NGO-team. Nurses available to patient and family for psychosocial needs with home-based-care. Nurses also increased public awareness on Respiratory-cancer issues like crude-tobacco-smoking in elderly through community programs.
Results: 118 lung cancer patients opinions of nursing-care analyzed two years. NGO functioning in operational stages graphically shown to MASCC symposium participants.
Conclusions: Our nursing design works as link between medical team patient. Benefits: Reduce depression, Manage patients needs. Improved QOL in elderly. Economical care for respiratory diseases of rural tribal communities.
Recommendation: Our approach reduces treatment-cost burden. we Plan to integrate our approach with MASCC experts at MASCC-Athens-conference venue. Need to share experiences at MASCC-symposium-2011 to break barriers in providing accessible home-based Oncology nursing-care in developing nations like India. Involving NGO's in resource poor settings is must to solve economic issues of oncology care.

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PSYCHOSOCIAL DYSFUNCTIONS ASSOCCIATED WITH NEWLY DIAGNOSED PROSTATE CANCER PATIENTS

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The aim of this study was to determine the nature and incidence of psychiatric disorders and psychosocial concerns in patients with newly diagnosed prostate cancer so as better to plan their supportive care.
Patients and methods: In our study 23 consecutive patients with recently diagnosed prostate cancer were entered. All patients were evaluated by one psychiatrist using the Diagnostic Interview Schedule and a semi-structured interview.
Results: 28% could be diagnosed with a prior affective or anxiety disorder. 4% had an adjustment disorder following the diagnosis of their prostate cancer. At the time of the interview 5% had a diagnosis of an affective disorder; 0 of an anxiety disorder. 4 had an adjustment disorder. Feelings of sadness were expressed by 41%, fear 28%, anger 3%, guilt 4%. 2 had considered suicide and thoughts of death were reported by 8%. 6 were accepting of their diagnosis. 5% expressed optimism. 9 were experiencing insomnia, 47% loss of libido. Difficulty concentrating was reported by 9%, a reduced interest in work by 28%. The 27% were concerned for their families and 8% had financial concerns. The 11% of patients seemed to be coping poorly.

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PSYCHOSOCIAL EFFECTS AND EVALUATION OF THE HEALTH-RELATED QUALITY OF LIFE IN PATIENTS SUFFERING FROM WELL CONTROLLED BREAST CANCER

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The aim of this study was to record the impact of breast cancer (bc) on the psychological health and health-related quality of life (HRQOL) of patients suffering from bc.
Patients and methods: We studied 24 outpatients suffering from well-controlled uncomplicated breast cancer who had the ability to sustain a regular job. We tried to record the psychosocial effects resulting of bc and to evaluate their HRQOL, comparing them to 24 healthy controls with similar demographic characteristics. To the patients and controls were given the Short-Form Healthy Survey (SF-36) and a questionnaire based on the Hamilton and Marker's depression scales.
Results: According to the two depression and anxiety scales used, a mild degree of anxiety and depression was diagnosed but with unimportant statistical difference (p = ns) between patients and healthy controls. Self-perceived HRQOL of patients appeared to be affected, with vitality ($p<0{,}002$), physical ($p<0{,}001$), and social functioning ($p<0{,}003$) as the most impaired subscales of the SF-36. The deterioration in their HRQOL was mainly related to the post-diagnosis alteration of their socioeconomic status. As accessed by the multiple regression analyses, none of the disease history and medication-related variables were found to have any influence on the results of the SF-36 subtests.
Conclusion: Despite the fact that we studied a relatively small sample of patients with bc, our results showed that their HRQOL was obviously affected, while their psychological health remained nearly unaffected.

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RELATIONS OF LUNG CANCER PATIENTS AND THEIR DOCTORS

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The aim of this study was to examine if the lung cancer (LC) patients would like to discuss medical guidances (MG) with their oncologist or an admitting physician. Patients and MethodsIn this study 21 consecutively LC patients were participated in semi structured interviews. ResultsThe 41% of the LC patients had MG. 85% thought it acceptable to discuss MG with the admitting physician with whom they had no prior relationship, and 93,20% thought that discussing MG issues was important. 9% of the LC patients had discussed MGs with their oncologist, and 23,8% would like to discuss MG with their oncologist. When specifically asked which physician they would choose, 43% of patients would prefer their oncologist, and 36% would prefer their primary care physician.Conclusion-Lung cancer patients must be educated why communicating on their MG is beneficial and train primary care physician and oncologists to initiate these difficult discussions.

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THE ROLE OF FAMILY IN THE QUALITY OF LIFE OF LUNG CANCER PATIENTS

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Introduction: Palliative care seeks to obtain Quality of Life (QOL) for people facing advanced lung cancer (LC). The aim of this study was to investigate the importance of family in QOL of LC patients and relationships between family support, pain, fatigue and depression.
Patients and method: Correlational study using a non-probabilistic intentional sample of 25 LC patients, mean age 63,4, admitted to palliative care. We applied a questionnaire of sociodemographic, family and clinical data. Fatigue, pain and family support intensity were rated 0–10.
Results: Participants were strongly supported by family (M=9,1 SD=2,0); referred low pain (M=1,6 SD=2,7), little fatigue (M=3,8 SD=3,3). 36% felt depressed. Correlating variables, no significant statistic differences were found (p>0,04). Those with family support, despite physically worsened, reported that close relationships and family well-being improved QOL. Those without it, indicated family conflicts and disease progression, worsened their QOL.
Conclusion: Despite the fact that we studied a relatively small sample of patients with LC, our results showed that family support was good for most lung cancer patients in palliative care.

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THE ROLE OF RELIGIOSITY IN CARE OF END STAGE BREAST CANCER PATIENTS

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The aim of this study was to examine the role of religiosity in care of end stage breast cancer (BC) patients.Patients and MethodsIn this study, were entered 25 patients with advanced breast cancer, who we interviewed at baseline and observed them (median, 120 days) until death. Religiosity was defined by patient-rated support of spiritual needs by the medical team and receipt of priest care services. The Brief Religious Coping Scale (RCOPE) assessed positive religious coping. End of life outcomes included patient quality of life (QoL) and receipt of hospice and any aggressive care. Analyses were adjusted for potential confounders and repeated according to median-split religious coping.ResultsBC patients whose spiritual needs were largely or completely supported by the medical team received more care in comparison with those not supported (p=0,002). High religious coping patients whose spiritual needs were largely or completely supported were more likely to receive care (p=0,003) and less likely to receive aggressive care (p=0,01) in comparison with those not supported. Spiritual support from the medical team and priest care visits were associated with higher QoL scores near death (p=0,005).ConclusionThe religiosity is associated with better breast cancer patients QoL near death.

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CHRONIC STRESS AND ALLOSTATIC LOAD IN ADOLESCENT-YOUNG ADULT (AYA) CANCER SURVIVORS AND THEIR SIBLINGS

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Introduction: Cancer therapy heightens AYA (15–29 years) survivors' risk for heart disease. Chronic stress may heighten this risk for survivors beyond that expected based on their treatments, and for siblings beyond that expected for peers who have not experienced cancer.

Purpose: To pilot methods and examine feasibility for a larger study of chronic stress and allostatic load (AL; cumulative impact of chronic stress on risk for cardiac disease) in AYA survivors and their siblings.
Methods: A cross-sectional correlational design and 2 groups ($n=8$ survivors, $n=8$ siblings) were used. AL was measured by multiple indicators of 6 interrelated physiological processes (blood pressure, heart rate, HPA axis function, SNS function, metabolic, inflammatory). Data (questionnaire, clinical measurements, blood, saliva) were collected at 1 study visit. Saliva samples were collected at home and mailed to us.
Results: Survivors and sibling reported similar levels of chronic stress and stress symptoms. Siblings had substantially higher levels of psychological symptoms especially depressive symptoms. Adherence to the home saliva sample collection protocol was 96.5%. A substantial percent of survivors (75%) and siblings (50%) had high (≥4) AL.
Conclusion: The results support our premise and show the need for further study of AL in both survivors and siblings.

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BREAST CANCER AND NUTRITIONAL KNOWLEDGE

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Non-balanced diet and obesity are considered significant risk factors for many cancers. In Breast Cancer (BC) patients heavy association between overweight and disease risk has been noted. Authors suggest that cancer survivors could benefit from interventions of nutritional education. Therefore we verified in detail nutritional knowledge (NK) of 296 adult BC outpatients consecutively attending our Centre from 2004 to 2008 and we valuated links between nutritional knowledge and demographic, anthropometric and metabolic variables. Patients completed the Parmenter K, Wardle J. questionnaire. The 114 items of the questionnaire cover four areas of nutrition knowledge: 1—awareness of current expert dietary recommendations, 2—understanding of terms such as fibre, saturated and unsaturated fats, cholesterol etc, 3—ability to choose the healthiest foods, 4—knowledge of diet-disease relationships.
Mean percentage of correct answers was almost 60%. Very few patients (9.6%) knew experts recommendations to consume more complex carbohydrate foods and only 46.7% of respondents were conscious that the recommended portions of fruit and vegetables are at least five/day. Level of education and civil status were variables with the higher impact on global nutritional knowledge. No significant correlation was between NK scores and other data, as previous slimming diets, body mass index or metabolic diseases.
In conclusion, the knowledge about messages of experts and public educational campaigns is still incomplete. Detailed understanding of the deficiencies in NK of BC patients may help to develop more targeted education interventions.

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PALLIATIVE CARE & IMPROVING QOL IN BREAST CANCER PATIENTS: EFFORTS BY AN NON-GOVT-ORGANIZATION [NGO] IN RESOURCE POOR DEVELOPING NATIONS

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Objectives: Palliative inaccessible in rural/tribal areas. Social-stigma, Fatigue, sexual-dysfunction, Sleeplessness, depression, pain commonly seen in Breast-cancer-sufferers. Hence our NGO-nurses took initiatives to help alleviate suffering of women with Breast-cancer since October 2005. Around 53 women die each year from breast cancer. Of these statistically over 90% express sexual-dysfunction, 68% experience unbearable-pain; 70% suffer social neglect/humiliation; 54% sleeplessness, nausea/vomiting; 37% complain fatigue and 64% had depression. Importance of spirituality/religion in coping with terminal-illness is increasingly recognized. Hence we followed-up rural women who need palliative-care. we involved community-leaders to make more women involved in our spiritual healing sessions.
Methods: We surveyed 55 breast-cancer subjects through QOL-questionnaires. After 14 weeks with psychosocial-support. Counseling/palliative support with anti-depressants/pain-killers/nutrition QOL improved to statistically significant level. Besides symptom assessment performed on weekly. Traditional faith-healers involved for more psychological impact on patients-community
Results: Opioids administered in 35%. Diazepam as adjuvant-drugs in 23%. Pethidine common analgesic in 56%, tramadol in 22%. Our NGO-nurses that 20 specialist palliative care beds required for our Rural/tribal population of 6,00,000. 53% women expressed that religious/community support/faith was most important factor that helped cope with breast-cancer. significant correlations between higher scores of spirituality with absence of depression. Likewise higher scores of QOL (ANOVA $p<0.001$) correlated with lack of sexual dysfunction/pain. Our NGO-initiative suggests over 70% patients need home-based-care-unit.

Conclusions: Life-span/QOL of breast-cancer-sufferers depends on social acceptance & appropriate-palliative-care. trained NGO-nurses needed in Palliative-care-services. Spiritual well-being increases end-of-life despair in terminally-ill. Field of Spiritual/psycho-social/community support is fertile ground for further investigations.

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LUNG CANCER & TOBACCO USE: SUPPORTIVE CARE NEEDS IN ASIAN COMMUNITY TO BRING DOWN MORTALITY/MORBIDITY

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Objectives: This is Phase-IV continuation of our NGO-Project in Indian-adolescents. Studied influence of counselling on reduction in tobacco-smoking eventually reducing lung-cancer-incidence. 218 deaths/year by lung-cancer. Crude-Tobacco-smoking socially accepted in rural/tribal India. From May 2007 our NGO conducts project " BIDI [Locally made crude-Indian-tobacco] OR HEALTH". Aims to reduce tobacco-products-consumption & provide de-addiction education/counselling.
Methods: 11 villages from rural India included. Total-participants 511, age 14–24. Tobacco-addicts graded clinically. Counseling-effect monitored for four-months. counseled for cause tobacco-use, educational/social factors. conducted 20 follow-up-sessions.
Results: Of 511 tobacco-users 493 continued to participate. [18 dropouts]. 32% COPD & respiratory disorders, 12% Tuberculosis. 8 healthcare personals from rural-Govt-clinics trained in counseling with community-leaders. 431 participants showed positive-attitude towards quitting tobacco use. Of these 431, 410 smokers quit habit of tobacco. 21 able to abstain for short-period but eventually restarted habit. Post-project-surveillance showed need for community help & Rehabilitation. Of 431 who responded positively majority [394] adolescents used tobacco due to peer-pressure [84%], imitation of tobacco-advertising [media/films/TV −11%].
Conclusions: NGO-activists with scientific knowledge/expertise are only available resource for influencing cancer-incidence in India. NGOs should utilize this approach to reduce cost-factor in cancer-education-strategies in rural/tribal areas where qualified Oncologists are rarity.
Recommendations: Developing-nations have little man-power/resources/technologies in de-addiction. nicotine replacement therapies are expensive & available in metro-cities. Government must carry out cancer-education-programmes with NGO-counsellors to bring down mortality/morbidity of lung-cancer. Anti-tobacco-activists provide better cancer care with reduced cost. We intend to form an Umbrella group of anti-cancer activists to workout more planned approach to this issue at MASCC-2011-Athensr-symposium

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NETWORKING OF NGOS WITH MASCC: IMPACT ON ECONOMICS OF LUNG CANCER TREATMENT IN RESOURCE POOR NATIONS

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Issues: National-cancer-registry based data demonstrates subsidized Psychosocial support/HRT & treatment-availability are major issues for Lung-cancer-sufferers in resource-poor-nations. Hence our Non-Govt-Organisation analysed & started this public health-policy recommendation.
Objectives: NGO's close to rural/tribal-communities. Cost of running NGO economical than medical-institution. Anti-cancer-drugs cost prohibitive. Govt-Health-Depts need to workout strategy to increase chemotherapy-access. In resource-poor-setting unaffordable cost leads to poor-therapeutic-compliance therefore high mortality. We develop training program to develop of sound/sustainable cancer-care for rural communities
Methods: We have 35 NGO-volunteers. No national-program for financial help to cancer patients exists in india. cancer-Care programs designed towards rural/tribal population needed. Our NGO since one year offers guidance for Rx-funding, guidance those going to city-oncology-centres. This project is unique as we are training NGO health workers to assist cancer patients community in improving access to Rx. Depending on support given by donors we give provide little-financial-assistance for chemo-radiotherapy & improve access to governmental hospitals. we started with two towns & intend to offer our services to 20 villages by 2015.
Results: We did face hiccups in mobilising volunteers/resources. This strategy has minimum maintenance-cost & high-acceptability. Forums like MASCC-2011 conference must support NGO-activists to form workgroup with MASCC to further develop this concept.
Conclusion: Economical-factors/access to therapy changes out-come of Lung-cancer-Rx. With little training our community NGO in rural/tribal India formed well knit volunteers-group who is giving free part-time dedicated service. CAM/psychosocial-support improves QOL reducing difficulties faces by resource-poor-southern countries. We urge Athens-symposium participants to share views/expertise on this burning-issue.

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CERVICAL CANCER SCREENING: EXPERIENCES OF INDIAN CANCER NGO IN RESOURCE POOR SETTINGS

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Introduction: Cervical -Cancer increasing at alarming rate in Asian-populations. Many government & Non-Govt programs running for early detection/prevention. Still majority of such projects failed in past to achieve targets. HPV/cervical-Cancer-screening effective in prevention, early detection of cervical-cancers. But major drawback to such effort is community-non-compliance with recommended frequency of screening. Not many studies done on this issue in India, hence we decided to undertook this-NGO-project to see how compliance affects cervical-cancer-screening-programs & what measures can be taken to improve-patient-participation in future.
Methods: NGO collected-data from April2008 in 6 district-healthcare-centers, n=86, age-mean 46, screened for cervical-Cancer in rural-India. cervical-Cancer-screening compliance observed 2 years. Statistically analysis done [p-values <0.05considered statistically significant]. Out of 86 participants, 73 women didnot adhere to compliance-criteria. Only 51 women fully complied with OPD-screening-followup.
Results: Overall compliance-rate-poor. 90% women from minority-tribal-community. 78% history of IUD, 60% women had sex with multiple-partners, 48% used alcohol/tobacco. Univariate-analyses = statistical difference in compliance as below: 72% compliance in alcohol/tobacco non-users Vs 39% alcohol/tobacco-users. 90% compliance in IUD-users Vs 10% condom-users, 70% compliance by women with multiple-sex-partners Vs 30% by those having-single-partner, 76% with income >12,000 INR Vs 24% with income <12000 INR [Per/6 months]. 68% with secondary education Vs 32% without-secondary-education. by multivariate logistic regression: IUD-impant, multiple sex partners, Income, alcohol/tobacco-use were highly significant predictors of compliance.
Conclusion: Cervical-cancer-screening follow-up dependent on = contraception, no.of sex-partners, Income, alcohol/tobacco-use. Due to resource/manpower constraints we didnot include large study-population. future collaborations with MASCC larger studies canbe done on hitherto unexplored issue of cervical-cancer in Asian-populations.

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PATIENT ADVOCACY PROJECT: VACCINES FOR CERVICAL CANCER

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Issue/argument: Therapy is still dream for majority of cervical-cancer-sufferers in resource-poor-nations. Design of CANCER-vaccine-trials is complex multi-dimensional ethical-issues. We focus on some controversial-issues identified in international/regional/local meetings/pharma-programs. Cervical-cancer-vaccine trial must stress on vulnerability of volunteers to exploitation by foreign/local research-groups/funders. Critical task is to protect autonomous capacity of volunteers to make decisions in face of uncertain-benefits and substantial-risks. Researchers need to determine if Vaccine-volunteers will have access to treatment during trial. Identity of participants be protected. Interaction with seniors at MASCC-201-symposium from developed-countries will boost our fight for human-rights of cervical CANCER-patients back in our developing nation.
Implementation methodology: This policy-recommendation project of our cancer-NGO running since 2007. We collaborated with 7 NGOs & government-agencies to modify/implement our cancer-vaccine-development-policy. Researchers & policy-planners need to develop separate forum to solve these issuesof vaccine-trial-participants. NGO's can play pivotal role.
Conclusion: Pharma-industry should include counseling & right to withdraw from trial as basic guidelines of HPV-vaccine-trials. Apart from monetary aspects unsuspected adverse reactions/deaths be properly evaluated/monitored. Our documentation supports this-view. Researchers need to evolve policy-guidelines to overcome barriers such ethical-ideas, legal-system-differences, educational/economic-status. Need to develop common consensus between research- community & pharma sector to reduce suffering of cervical-cancer-sufferers.
Recommendations: CANCER healthcare workers from NGOs should unite to form workgroup to settle these-burning-issues. We project our experiences on this & present our findings graphically to MASCC-2011-participants. Our N.G.O. is fighting on this issue but we need large platform like MASCC-Athens-meetings to share our Community experiences/difficulties with International audiences/experts.

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APREPITANT IS ACTIVE IN BIOLOGICAL THERAPIES INDUCED SEVERE PRURITUS: PROOF OF CONCEPT STUDY

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Background: Increasing evidences prove the involvement of keratinocytes NK1 receptors in the pathogenesis of

pruritus: this prospective study aims to evaluate the role of aprepitant, a NK1 receptor antagonist, in the treatment of severe pruritus induced by biological therapies.
Methods: 22 patients (11 Male/11 Female), 61 years as mean age, affected by lung cancer (10), colorectal cancer (9) or other tumors (3), who developed severe pruritus (VAS ≥7) during treatment with erlotinib (10), cetuximab (10), sunitinib (1) and imatinib (1) were enrolled. After the onset of severe pruritus aprepitant was administered (125 mg day 1; 80 mg day 3; 80 mg day 5). Pruritus intensity was evaluated by VAS score before and after aprepitant administration (day 7 and every other following week until day 90 or the recurrence moment).
Results: Initial pruritus intensity was 9 in 6 patients, 8 in 12 and 7 in 4 (median 8). After 1 week of aprepitant therapy the reported pruritus intensity was 0 in 10 patients, 1 in 4, 2 in 4, 3 in 2, 4 in 1 and 6 in 1 (median 1). The median decrease was 88%. Moreover, 91% of patients responded to aprepitant (decrease >50%), 2 did not. Median duration of one cycle effect was 25 days (7–90 days).
Conclusions: This study assessed aprepitant activity in the management of biological therapies induced severe pruritus. Randomized studies are necessary to compare aprepitant activity with those of standard therapies.

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THE CLOCK IS TICKING: FEBRILE NEUTROPENIA IN THE EMERGENCY DEPARTMENT

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Introduction: Febrile neutropenia is a potentially fatal complication of cytotoxic therapy used in malignancies. It is defined as having a temperature over 38 degrees Celsius and a neutrophil count less than 0.5 x 10^9/L and is considered to be a medical emergency. Rapid administration of intravenous antibiotics is vital in preventing life-threatening sepsis.
Objective: To explore the management of febrile neutropenia in cancer patients within the emergency department.
Methods: An audit was undertaken in March 2009 of 49 cancer patients that presented to emergency with febrile neutropenia. A poster was created that defined febrile neutropenia and the immediate management required for these patients. In-services were presented to raise awareness of the importance of rapid treatment. A follow up audit of 22 patients was then conducted in September to November 2010.
Results: The initial audit revealed average time to administration of intravenous antibiotics was 1 hr 8minutes. The inservices and poster received good feedback from staff.
A separate initiative in the emergency department has seen the implementation of a pilot study using a sepsis pathway. The follow up audit showed that average administration time is an average of 56minutes from prescribing however; the patients are reviewed by a medical officer an average of 1hour and 23minutes from triage.
Discussion: More research is required to reduce review times after triage for these patients.
Further and more frequent inservices are needed and should include emergency medical officers.
Discussions of the possibility of introducing standing orders for nurses to commence therapy without needing a prescription.

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EVIDENCE-BASED POST-OPERATIVE EXERCISE GUIDELINES ON IMPROVING SHOULDER MOTION AND LESSENING THE SEVERITY OF LYMPHEDEMA FOR BREAST CANCER SURVIVORS AFTER SURGERY

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Background: Impaired shoulder mobility and lymphedema are common complications after breast cancer surgery with axillary lymph node dissection. Post-operative exercises are proven to be effective in improving shoulder mobility and lessening lymphedema severity. With the application of evidence-based exercise guidelines in clinical practice, both patients and nurses could gain benefits as good quality care are provided, and therefore, produce better patient outcomes.
Objectives: To illustrate recommendations of evidence-based post-operative exercise guidelines and its benefits for nurses and breast cancer survivors after surgery.
Methods: Before developing the evidence-based guidelines, the authors conducted a systematic review and the results showed that exercise was effective in improving shoulder motion but did not alter the severity of lymphedema. The principles for grading the evidence and developing recommendations are based on the Scottish Intercollegiate Guidelines Network (SIGN) system. The level of evidence and grades of recommendations were assessed according to quality of the selected studies and their applicability to the breast cancer survivors.
Results: Three recommendations are included in the guidelines:
1) pre-operative assessments;
2) early post-operative range of motion and stretching exercises; and
3) follow-up assessments.

Conclusions: Evidence-based exercise guidelines provide interventions with proven benefits. Nurses can offer consistent care to patients accordingly. The guidelines serve as a checklist for reference whenever or wherever doubts arise, for both patients and nurses. Patients can practice accordingly at home with confidence and hence speed up recovery. The guidelines also serve to assure patients that they are under consistent and reliable care.

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ALTERNATIVE SYSTEM OF MEDICINES [CAM] & CANCER PATIENTS SURVIVAL: ARE WE READY TO CHANGE OUR THERAPEUTIC APPROACH?

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Issues: Lung-cancer-patients access to anti-cancer-therapies [ACT] high priority-issue in resource-poor-nations. Targeted anti-cancer therapies very-expensive. No state-Government-program to subsidize therapy-cost. Additionally cancer-patients sufferings further complicated by social-stigma, fatigue, sexual-dysfunction, depression/pain. Alternative System of Medicine [CAM] is novel/acceptable & low-cost-option.
Objective: ACT available to only 16% of indian cancer-sufferers. Poor availability and lack of trained nursing-personnel increase mortality. Statistically >92% patients suffer sexual-dysfunction, 72% unbearable-pain; >84% social neglect/humiliation, >47% fatigue, >78% depression. Our phase-III-project evaluated needs/responses to alternative-system of medicines [CAM].
Methods: Our Indian cancer Non-Govt-Organization [NGO] surveyed 192 cancer-sufferers through QOL-questionnaires. Evaluation done after 14 weeks of CAM-therapy. counseling & palliative-support with anti-depressants/pain-killers/nutrition QOL improved to statistically significant level. symptom assessment performed weekly. Traditional-faith-healers improved psychological impact on patients. Patients/family members attitudes towards CAM-therapy evaluated.
Results: CAM therapy acceptable to >81% compared to chemotherapy.
Advantages of CAM: No-ADR's, low-cost, high-acceptance, locally-available.
In our study >65% women felt spirituality/CAM helped them to cope with cancer. significant correlations between higher scores of spirituality with absence of depression & sexual dysfunction was noted. CAM administered in rural/tribal-India and included hydro-therapy/hypno-therapy for pain, acupressure/acupuncture for stress-busting, Tulsi/Shatavari/Ashwagandha-plant-extract to increase immunity etc. >68% patients enquired if CAM-therapy will be available in a home-based-care-unit.
Conclusions: Access to ACT is poor. Life-span/QOL of cancer-sufferers depends on psycho-social, appropriate-palliative-care. Larger trials of CAM can bring more hope in future.field of spiritual/psycho-social/community support is fertile ground for further investigations. We NGO-representatives present our concerns/difficulties in access to Ca-chemotherapy at the MASCC-2011-symposium & need interactions with seniors from MASCC.

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IMPACT OF DIFFERENT TYPES OF GASTROINTESTINAL DECOMPRESSION IN THE GASTROINTESTINAL POSTOPERATIVE RECOVERY OF GASTRIC CANCER PATIENTS

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Objective: Assess effects of different gastrointestinal decompression on postoperative recovery of gastric cancer patients.
Method: Eighty-one gastric cancer patients, similar in gender, age, stage and pathology of disease, extent of surgery and nutritional condition, were randomly divided into control group (40) and treatment group (41). Patients in the treatment group received a device allowing gastric juices to spontaneously drain by gravity. Those in the control group received a drainage device with negative pressure that necessitated nurse intervention to maintain negative pressure. Outcome data used t scores for comparison between the two groups. A p value of .05 was used to determine significant differences.
Results: On average, although not statistically significant, the amount of gastric juices in the treatment group was less than the control group with a significance of $p > .05$ on the surgical day and at three days post-op. Tube insertion, nursing management of the gastric tube and length of hospitalization were less in the treatment group with a p of <.05. The two groups showed no statistical significance in postoperative discomfort or post-op complications.
Conclusions: The simpler and shorter procedure of using a device to drain gastric juice by gravity has been shown to be as effective and more cost effective for gastrointestinal decompression then inserting a drainage device with negative pressure. No difference in groups was shown in reports of discomfort or post-op complications. Those in the treatment group had comparatively shorter hospital stays

and required less nursing thus reducing hospital costs and increasing social and economic benefits to patients.

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BREAST CANCER PATIENTS EDUCATION: NGO PILOT PROJECT

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Introduction: Breast Cancer awareness/Health-education policy vastly affected by sociocultural/economic factors. we studied six educational methodologies for one year about breast-Cancer awareness-education.
Methodology: Since April 2007, four conventional breast-Cancer awareness methods analysed. 117 breast Cancer sufferers divided in 4 groups on basis of economic/social, cultural/ethnic background. conventional health-education methods modified to study impact of newer educational/awareness-methods. Done by series of lectures, symposia/seminars in four subgroups. Each included peers [60%], medical school workers [12%], health care associates [23%], community-leaders [5%]. Evaluation done by questionnaire before/after study. After exposure of above population to modified health education/teaching methods over 20 session's. objective was change in grasping & practical-implementation of gained knowledge by cancer-sufferers to support/educate newly diagnosed breast cancer-patients
Result: 68% of population showed perceptive change in learning-abilities. 23% didnot show this change. 12% population non-respondent [failure in follow-up].Social factors in 41%, cultural factors in 34%, economic criteria in 68%, religious-factors in 9%.
Discussion/conclusion: We urgently need to focus on cultural-economical-social perceptions about breast-Cancer-awareness education. For developing nations this approach will certainly have positive impact on exploring and problematizing socio-cultural diversity and difference with special significance to educational policy implementation in rural/tribal areas of developing nations with limited-resources. This issue needs more further studies. At MASCC-2011-symposium we exchange our Indian-Cancer-NGO experiences in handling breast-cancer-education-efforts.
Recommendations: We need newer educational strategies in our constant endeavour to decide culturally-socially-economically embedded perceptions in breast cancer awareness/educational system. Community of educators/evaluator's need to devise/practise specific-conditions on socio-political level.We form model-approach on cancer-patients-education by interactions with seniors/nurses at MASCC-Athens.

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CHLORPROMAZINE PLUS METHOCLOPRAMIDE AND PREDNISONE IS EFFECTIVE IN LATE HEMESIS CONTROL OF PATIENTS PRETREATED WITH PALONOSETRON THAN WITH TROPISETRON

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Background: Late hemesis is often difficult to resolve, especially when patient received highly hemetogenic chemotherapy regimens.
Aims: Aim of this study is to define which is the best cost-effective antihemetic therapy in late hemesis when palonosetron or tropisetron are used in acute hemesis.
Methods: We considered 95patients in period June 2007–January 2011. 50patients received tropisetron 2 mg tid i.v. until 48hours after the end of chemotherapy. Of these 15received DHAP-like regimen, 15received IGEV, 6BEAM and 14 "3+7" regimen.
45patients received palonosetron 250mcg i.v. day1 of chemotherapy. Of these 20received DHAP-like regimen, 10received IGEV, 5BEAM and 10 "3+7" regimen.
If patients presented nausea and vomiting 48hours after the end of chemotherapy, they received dexametason4mg + methoclopramide20mg i.v.tid. If nausea and vomiting persisted, they added largactil 12.5 mg i.v.tid. Results were evaluated by Fisher exact test.
Results: Out of 45 patients receiving palonosetron, 5had late hemesis, 4requiring chlorpromazine and all responded to treatment. Out of 50patients receiving tropisetron, 8had late hemesis, 6requiring chlorpromazine and only one responded to treatment.
No difference were noted in late hemesis between palonosetron and tropisetron(two tailed Fisher text p0.56).
Chlorpromazine was effective in control of late hemesis mainly in palonosetron group(two tailed Fisher text p0.046).
In palonosetron group, median global antiemetic direct expense for each patient was107.25euros(R107.25-834.53), while in tropisetron group was410.5euros(R30-515).
Median antiemetic indirect expense was20euros in palonosetron group, while in tropisetron group was280euros.

Summary/conclusion: In this study chlorpromazine in association with methoclopramide and dexametason is cost effective in management of late hemesis of patients treated with palonosetron.

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EMPIRIC THERAPY WITH PIPERACILLIN-TAZOBACTAM PLUS AMIKACIN WITH OR WITHOUT TIGECYCLIN IN POST CHEMOTHERAPY FEBRILE NEUTROPENIA: MONOCENTRIC RETROSPECTIVE STUDY

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Background: Tigecyclin is a bactericidal antibiotic highly effective in gram positive, gram negative and anaerobes infection.
Aims: Aim of this study is to evaluate efficacy, safety,feasibility and costs of tigecyclin addition to piperacillin-tazobactam plus amikacin in febrile neutropenia in terms of: Days of fever, Days of hospitalization, Cost of antibiotic and supportive therapy per day of hospitalization.
Methods: This is a monocentric, retrospective, nonrandomized study. Patients with post chemotherapy febrile neutropenia were randomized to receive empiric therapy with Piperacillin-Tazobactam4.5 g tid iv, Amikacin 15 mg/kg/day iv with (group A) or without (group B) Tigecyclin 100 mg/day iv. Daily costs of antibiotic and supportive therapy for each patient were calculate dividing the global cost of entire period of hospitalization for the days of hospitalization.
Patients: In two years 16 patients were enrolled. 4patients had NHL, 1HD, 2AML,1received autologous bone marrow transplantation. 6patients had NHL and 2AML.
Results: In group A median of days of fever was 10.5 days (R6-12) and median of hospitalization was 35.5 days (R15-42). Median cost of antibiotic and supportive therapy was 550euros/day(R350-1470).
In arm B median of days of fever was 13 days(R4-18) and median of hospitalization was 20 days(R15-27). Median cost of antibiotic and supportive therapy was 472euros/day (R182-842).
No adverse effects in patients receiving tigecyclin were registered.
Summary/conclusion: Tigecyclin seems to be safe and feasible in patients with post chemotherapy febrile neutropenia. Data regarding days of fever, cost of antibiotic and supportive therapy per day of hospitalization seem to be better in Tigecyclin group, on the contrary days of hospitalization are lower in group without tigecyclin.

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INTRAVENOUS IRON SUPPORT VS ORAL LIPOSOMIAL IRON SUPPORT IN PATIENTS WITH REFRACTORY ANEMIA TREATED WITH EPO ALPHA. MONOCENTRIC PROSPECTIC STUDY

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Background: Intravenous iron support simultaneous to erythropoietin administration improve response to erythropoietin in myelodysplastic patients (MDS).
Aims: Aim of this study is to verify if in MDS patient support with oral liposomal iron is not inferior to iv iron support.
Methods: Between july 2008 and december 2010, 24patients affected by refractory anemia were studied.
Patients were randomized 1:1 to receive in group A sodium ferrigluconate 62.5 mg iv in NS100 ml in 1 h/day in the day when patient received alpha erythropoietin 40000 IU sc/week + calcium levofolinate 7.5 mg/day orally + Vitamin B12: 400 mg/day orally.
In group B patient received lipofer 14 mg 2 tablets orally/day + alpha erythropoietin 40000 IU sc/week + calcium levofolinate 7.5 mg/day orally + Vitamin B12: 400 mg/day orally.
Caryotype was normal in group A and B patients.
Median level of haemoglobin was 9 g/dl in group A (R8.5-11) and 8.8 g/dl (R8.5-11.5)in group B.
Results: Group A patients increased Hb level of 1 g/dl after a median time of 4 weeks(R4-7) and after a median time of 5 weeks(R4-8) in group B. Most frequent side effects in group A were erythema in site of injection in 4 patients (33%), hypotension in 1 patient (8%). Most frequent side effects in group B were grade 2-3diarrhoea in 4 patients (33%).
During median follow-up time patients of A and B group gaigned near 3 g/dl of Hb.
Summary/conclusion: Oral liposomial iron supporting erythropoietinic therapy seems to be safe, feasible and substantially not inferior to intravenous iron support in patients affected by refractory anemia.

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PRE-TREATMENT WITH PROBIOTIC FACTORS PROTECT INTESTINAL CELLS FROM 5-FLUOROURACIL INDUCED CHANGES TO TRANSEPITHELIAL RESISTANCE AND CASPASE 3/7 ACTIVATION

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The potential efficacy of a probiotic-based preventative strategy against intestinal mucositis has yet to be investigated. We evaluated supernatants (SN) from *Escherichia coli* Nissle 1917 (EcN) and *Lactobacillus rhamnosus* GG (LGG) for their capacity to prevent 5-Fluorouracil (5-FU)-induced damage to epithelial cells.

IEC-6 cells were treated daily from day 0 to day 4, with 1 ml of either PBS (untreated control); Mann Rogosa Sharpe (MRS) Broth; Tryptic Soy Broth (TSB), LGG SN or EcN SN. With the exception of the untreated cells, all groups were treated with 5-FU (5 μM) for 24 h at day 4. Trans-epithelial resistance (TER) was determined on days 4–8, while activation of caspases 3 and 7 was determined on days 5 and 6. Statistical analysis was by one way ANOVA with significance assumed at $p<0.05$.

Pre-treatment with LGG SN increased TER compared to controls at day 4. 5-FU administration reduced TER compared to untreated cells on day 5. Pre-treatment with MRS, LGG SN and EcN SN all prevented the decrease in TER induced by 5-FU on day 5. 5-FU increased caspase activation on days 5 and 6 compared to untreated controls. At day 5, cells pre-treated with MRS, TSB, LGG SN or EcN SN all displayed reduced caspase activation. Caspase activation in cells pre-treated with MRS, LGG SN and EcN SN at day 6 was similarly reduced compared to 5-FU controls.

Pre-treatment with selected probiotic SN could potentially prevent or inhibit enterocyte apoptosis and loss of intestinal barrier function induced by 5-FU.

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PRESENCE OF CLINICAL DETERMINANTS ASSOCIATED WITH NEURO-COGNITIVE DYSFUNCTION IN BREAST CANCER SURVIVORS

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Objectives: Clinical determinants are potentially helpful in the identification of cancer survivors who may be at risk for post-chemotherapy neuro-cognitive dysfunction. The objective of this study is to investigate the presence of these documented determinants among breast cancer survivors at an ambulatory cancer centre in Singapore.

Methods: This was a retrospective analysis of 160 breast cancer survivors who completed anthracycline-based chemotherapy between August-2009 and November-2010. Patients' medical records were reviewed to identify the 7 documented risk factors (age >65, post-menopausal, fatigue interference score >6, Beck Anxiety Inventory score >15, haemoglobin level <12 g/dL at the end of 3rd cycle of chemotherapy, receipt of anti-hormonal treatment and concomitant neuro-degenerative medication) and a protective factor (high cognitive reserve—>12 years of education).

Results: Majority of the breast cancer survivors were Chinese (mean age: 55.5 years; SD: 9.2 years). The most common risk factors observed were anemia (68.8%), receipt of anti-hormonal treatment (63.8%) and post-menopausal status (58.1%). Significant fatigue and anxiety, which were known to correlate with self-reported cognitive dysfunction, were less common (14.4% and 29.4%, respectively). Overall, 56.3% of the survivors had 3 or more risk factors (out of 7) which may predispose them to neuro-cognitive dysfunction; and a significant number of patients (30.6%) possessed the protective factor of high cognitive reserve.

Conclusion: The prevalence of clinical determinants and a population with multiple risk factors for post-chemotherapy neuro-cognitive dysfunction have been identified. Further neuropsychological tests will be conducted to investigate the correlation between the clinical determinants and cognitive function in these cancer survivors.

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DESTRUCTION OF AN ADVANCED MALIGNANT TUMOUR BY DIRECT ELECTRIC CURRENT

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Objective: We carried out a study on the effect of low-level direct current on cancer by using it to treat a woman who had a large malignant squamous cell carcinoma of the sinus cavity.

Method: We used a device that produced low-level direct current and passed the current through the tumour via a 4x4 cm flat aluminium foil and a needle electrode that was insulated along its entire length except for the portion actually inserted into the tumour. The treatment was eight hourly daily and lasted for eight weeks.

Result: The therapy resulted in the remission of the tumour and a feeling of wellness by the patient.

Conclusion: This finding implies promising therapeutic potential for the use of direct electrical current as a simple, effective, low cost alternative for the treatment of cancer.

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SIDE-EFFECTS OF INTERMEDIATE DOSE INTERFERON (IDI) ALFA IN ADJUVANT TREATMENT FOR HIGH-RISK MELANOMA

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Objective: To determine interferon-induced toxicity during the adjuvant treatment of high-risk for recurrence melanoma patients.
Methods: Histories of 106 stage IIb–c and III cutaneous melanoma patients were reviewed. All patients received IDI adjuvant therapy after excisional biopsy: 9 MU/day/5 days per week for 4 weeks, followed by 48 weeks of the same dose, 3 times a week, sc. Hepatic, renal and hematologic status as well psychiatric condition were examined before administration of therapy.
Results: Generally, the treatment was well tolerated. The most common side-effect was fly-like syndrome at the beginning of therapy found in 79 (74,5%) patients, followed by chronic fatigue in 56 (53%) patients, weight loss in 21 (20%), alopecia in 17 (16%), nausea in 12 (11%) patients. Of neuropsychiatric symptoms the most frequent were depression with apathy (17%), insomnia (11%), irritability (6%). Laboratory findings revealed leucopenia in 13 (12%) patients, thrombocytopenia in 5 (5%) and elevated liver enzymes in 19 (18%). All drug-related adverse effects were mild, grade I–II, except in 4 patients with severe neutropenia and one patient with psychiatric symptoms. With appropriate management/premedication (paracetamol, antidepressants, colono-stimulating factors, fluid intake) patients could be maintained on therapy. 84 (79%) patients successfully terminated the treatment. Treatment was discontinued because of disease progression (16%), patients' uncollaboration (3%) or drug-toxicity (2%) symptoms.
Conclusion: IDI alfa 2a in adjuvant treatment of stage II–III cutaneous melanoma was well tolerated. It can be an alternative in situations where high-cost high-dose interferon alfa 2b is not available.

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EXPLORING UPPER LIMB DYSFUNCTIONS FROM THE PERSPECTIVE OF THE ICF IN BREAST CANCER SURVIVORS

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Objective: Bio-psycho-social approaches are needed for measures regarding functional disability in breast cancer survivors. The Disability of the Arm, Shoulder and Hand Questionnaires (DASH) contains items that enable to measure three ICF outcomes such as impairment, activity limitation and participation restriction. The purpose of this study was to explore the upper limb dysfunctions with DASH and to classify the results from the perspective of the ICF model.
Methods: One hundred and ninety-one patients with breast cancer entered the prospective cohort study and 133 patients (69.6%) were followed up after 2 years. Upper-limb dysfunctions were assessed before, 3,6 month and 2 years after breast cancer surgery by the DASH in relation to the ICF framework. DASH provided a means namely impairment score (I), activity limitation score (A), participation restriction score (P), both activity and participation restrictions score (AP).
Results: Patients reported less than 10 score before surgery. After surgery, however, AP scores (ex: sexual activity, recreational activities, limitation in daily activity) showed the highest (44 at 3 month, 34 at 6 month, 17 at 2 years). Impairment was the second problematic component (24 at 3 month, 20 at 6 month and 16 at 2 years). Two years after surgery for breast cancer, patients show significantly less treatment related upper limb dysfunctions, but items requiring both activity and participation remained disabled.
Conclusion: This study emphasizes the importance of the description of functional disability from a comprehensive perspective including not only body functions but also activities and participation domains.

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SAVENE (DEXRAZOXANE) IN THE TREATMENT OF ANTHRACYCLINE EXTRAVASATION. THE BELGIAN EXPERIENCE

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Anthracycline extravasation (ACEV) is a rare but potentially devastating event which can result in severe injuries including ulceration and necrosis, slow-healing lesions, serious joint damage, and permanent disfigurement. It can delay further scheduled chemotherapy and affect cancer treatment outcome. Savene (dexrazoxane) is the only approved antidote for ACEV and is administered by intravenous infusion. Its efficacy has been demonstrated in clinical trials with biopsy-verified ACEV with a 98% success rate (no need for surgical debridement) allowing for continuation of chemotherapy in 71% of patients. Adverse events, mainly haematological toxicity, were rapidly reversible.
A survey of Savene use was conducted in Belgium from 2007 to 2010 in order to assess, in clinical practice, the efficacy and

safety profile of Savene for ACEV. Data were obtained for 41 cancer patients, 68% (28/41) had ACEV from central venous catheters. Surgical debridement due to ACEV could be avoided in 95% (39/41) of patients treated with Savene. Planned chemotherapy was maintained in 73% (30/41) of patients.
Eight adverse events were reported in 4 patients treated with Savene: 6 events were assessed to be of CTC grades 1–2 (nausea, leucopenia, arm pain) and 2 events (neutropenia and pancytopenia) were assessed to be grade 3.
These data confirm the efficacy and safety profile of Savene in clinical practice for the treatment of anthracycline extravasation, including extravasations from central venous catheters.

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PHARMACOTHERAPY WITH CAM: EVALUATING OPTIONS IN PAIN MANAGEMENT OF GI-CANCER SUFFERERS

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Issues: ih Gastrointestinal cancer, pain most feared. Few studies explored CAM/hypnotism for analgesia. no follow-up center for pain-management across India. no scientific-data available about pain-management of cancer patients in Asia. CAM-Therapy highly preferred by Asian-cancer-patients. Cultural/psychological/spiritual/social factors influence quality-of-life (QOL)
Study plan: Our Cancer-NGO formed team of oncologists, pharmacologists, counselor & nurse to devise comprehensive-pain-management-approach with sound understanding of pharma drug-mechanisms, adverse-effects, potential drug–drug-interactions.
Review of current options: Three primary categories of analgesics include non-opioids, opioids, adjuvant agents. non-opioids category consists of acetaminophen, nonsteroidal anti-inflammatory drugs. Acetaminophen used for long-term use in management of mild pain or as supplement in management of intense pain-syndromes. Nonsteroidal antiinflammatory-drugs (NSAIDs) affect analgesia by reducing biosynthesis of prostaglandins. opioids represent most useful agents for treatment of pain associated with Gastrointestinal cancer. wide variety of non-opioids medications from several pharmacological classes reduce pain include anticonvulsants, antidepressants, corticosteroids, local anesthetics. Furthermore, bisphosphonates, radiotherapy need more scientific studies to prove as analgesics in pain due to Gastrointestinal-cancer.
Alternative system of medicine: QOL/Mental[wellbeing of Colon cancer sufferers enhanced by spirituality/psycho-social-support. Religion-based spirituality does provide solace reducing depression. Chemotherapy -with-CAM & spirituality/psycho-social-support emerging new hope. Spiritual well-being prevents end-of-life-despair. Effect of spiritual/psycho-social-community support fertile ground for further investigations. We need to work-together/share-experiences at MASCC-2011-symposium to work on this issue aiming at improving spiritual-health and general-QOL among cancer-sufferers.
Conclusion/recommendations: Pain due to Gastrointestinal cancer is distressing to patient/family as such pain is intractable. Its challenge to oncologists/nurses. What's needed—comprehensive assessment along with judicious use of analgesics/supportive-psychotherapy.

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DEVELOPMENT OF AN EVIDENCE-BASED PAIN EDUCATION PROGRAM FOR CANCER PATIENTS

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Objectives: The purpose of this presentation is to describe the developmental process and recommendations of evidence-based cancer pain education guidelines.
Methods: Before developing the evidence-based guidelines, the authors conducted a systematic review to determine whether pain education program was effective in cancer pain management. The principles for grading the evidence and developing recommendations were based on the Scottish Intercollegiate Guidelines Network (SIGN) system. The level of evidence and grades of recommendation were assessed according to the quality of the selected studies and their applicability to the target population.
Results: The results showed that pain education program were effective in increasing patients' knowledge of cancer pain, reducing their perceived barriers to pain management and relieving pain of cancer patients but no significant results on quality of life. The types of intervention employed in these studies were used as key references in developing the guidelines. The evidence-based guideline includes recommendations on assessment methods and how to conduct the education program effectively. Rationales of the recommended evidence-based practice are also provided in the guidelines.
Conclusion: The pain education program consists of four parts: an individualized education session, an information booklet, a pain dairy and two follow-up phone calls conducted on the third and seventh days after discharge. It aims to provide cancer patients with the knowledge, skills, and nursing support that are necessary for cancer pain management. The application of evidence-based guidelines to clinical practice can help healthcare professionals to provide good quality care to patients and, in turn, improve patient outcomes.

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REACTIVATION OF HEPATITIS B INFECTION AMONG PATIENTS WITH CANCER

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Objectives: Determining the prevalence of HBV reactivation is essential to establish an evidence-based HBV screening policy for US cancer patients.
Methods: This retrospective cohort study used institutional databases and chart reviews to identify cancer patients who received chemotherapy (1/2004-9/2007). HBV infection was determined by either
1) positive HBsAg or anti-HBc test, or
2) HBV by ICD-9 code. HBV reactivation was defined as:
1) ALT >100 IU/L or 3-fold rise from baseline, or
2) detectable HBV DNA ≤6 months after chemotherapy. Patients with reactivation were compared to those without reactivation for demographic characteristics, cancer type, and chemotherapeutic agent.
Results: Among 70,737 cancer patients, 10,729 received chemotherapy. Of these, 1787 patients (17%) were screened and 151 (8%) were positive for HBsAg or anti-HBc; 40 patients (0.4%) had an ICD-9 code for HBV. Of these 191 patients with HBV infection, the mean age was 53 years, 36% were women, and 49% were white. Reactivation occurred in 84 of 191 HBV patients (44%). Of those with reactivation, 25% were Asian compared to 11% without reactivation (p=0.04). Younger age was associated with reactivation (p=0.02). Receipt of antitumor antibiotics or immunotherapy was associated with reactivation. Reactivation occurred in 35% (n=35/101) of patients with solid tumors and 54% (n=49/90) of patients with hematologic malignancies (p=0.006).
Conclusions: Reactivation occurred in nearly half of HBV patients and was associated with Asian ethnicity, younger age, hematologic malignancy, and antitumor antibiotics/immunotherapy. Future US screening guidelines for cancer patients should account for high-risk groups at risk for HBV and reactivation.

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THE BURDEN OF CANCER-RELATED ANEMIA ON THE PATIENT: QUALITATIVE EXPLORATION AND DEVELOPMENT OF A CONCEPTUAL MODEL

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Objectives: Because no studies over the past 10 years have reported patient perceptions about their cancer-related anemia (CRA), the objective of this study was to identify and qualitatively explore concepts relevant to patients with CRA, and to use the results to develop a conceptual model.
Methods: Patients were recruited from 3 sites in the USA. Individual interviews were conducted using a semi-structured interview guide to explore the symptoms and impacts of CRA. All interviews were audio taped, transcribed, and analyzed using Atlas.ti software.
Results: Patients (n=20) were demographically diverse (mean age=64, age range=34–84, 70% female, 40% white); had a range of cancer types (breast, colon, lung, multiple myeloma, lymphoma, melanoma, leukemia, rectal); and had a range of hemoglobin levels (mean=10 g/dL, range=7.6–11.8 g/dL), indicating varying anemia severity. Patient-reported symptoms were grouped into the following domains: less energy/fatigue (reported by n=20), weakness/heaviness (n=15), weight/appetite (n=10), dizziness/lightheadedness (n=7), muscle discomfort (n=7), other symptoms (n=7), shortness of breath (n=6), and headache (n=1). Patients reported 7 main types of CRA related impacts: emotions (n=20), lifestyle/social functioning (n=18), physical functioning (n=16), restricted daily activity (n=14), sleep disturbance (n=11), cognitive ability (n=6), and other impacts (n=6). Patients rated the symptoms of fatigue, low stamina, less energy, and tiredness; and the impacts on work, sleep, lifestyle/social functioning, and physical activity, as those causing them the most difficulty.
Conclusions: The patient language and evidence-based conceptual model from this research should be useful in guiding future measurement of the patient-reported symptoms and impacts of CRA.

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PSYCHOMETRIC VALIDATION OF A SPANISH VERSION OF THE PATIENT SATISFACTIONWITH CANCER-RELATED CARE MEASURE: A PATIENT NAVIGATION RESEARCH PROGRAM

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Background: Patient satisfaction (PS) is a key measure of quality of care, and one of the four study outcomes of the multi-site National Cancer Institute (NCI) Patient Navigation Research Program (PNRP) to reduce disparities in cancer care. Although monolingual Spanish speakers (MSS) constitute a large proportion of the United States healthcare consumer population, no Spanish measure of PS that spans the spectrum of cancer-related care has been validated for MSS.
Objective: To cross-validate the Patient Satisfaction with Cancer Care (PSCC) measure for Spanish (PSCC-Sp) speakers receiving diagnostic and therapeutic cancer-related care.
Methods: Original PSCC items were professionally translated and back-translated to ensure cultural appropriateness, meaningfulness and equivalence. The resulting 18-item PSCC-Sp measure was administered to 185 MSS. We evaluated latent structure and internal consistency of the PSCC-Sp using principal components analysis (PCA) and Cronbach coefficient alpha (α), respectively. We used correlation analyses to demonstrate divergence and convergence of the PSCC-Sp with s Spanish versions of the Patient Satisfaction with Interpersonal Relationship with Navigator (PSN-I-Sp) measure and patients' demographics.
Results: The PCA revealed a coherent set of items that explicates 60% of the variance in PS. Reliability assessment revealed high internal consistency (α=.92). The PSCC-Sp demonstrated good face, as well as convergent and divergent validities as indicated by moderate correlations with the PSN-I-Sp ($p<0.003$) and non-significant correlations with primary language, marital status, and household income (all $p_s>0.05$).
Conclusion: The PSCC-Sp is a valid and reliable measure of patient satisfaction for MSS.

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CANCER HISTORY, MEMORY PROBLEMS, AND DEMOGRAPHIC AND SOCIOECONOMIC BACKGROUNDS: A CROSS-SECTIONAL STUDY OF THE UNITED STATES POPULATION

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Background: Cancer and its treatment can cause memory impairment (CRMI) that can negatively affect psychosocial functioning and quality of life for patients and survivors.
Objective: To examine the relationships between CRMI, socioeconomic and demographic backgrounds, and history of cancer/cancer treatment.
Methods: We examined data from individuals with and without a history of cancer using a nationally representative sample of the civilian, non-institutionalized United States population from the National Health and Nutrition Examination Survey (NHANES 1999–2008). Participants answered the yes–no question "Are you limited in any way because of difficulty remembering or because you experience periods of confusion?" We controlled for age, sex, race-ethnicity, education, poverty level, and general health.
Results: The sample (N=17,003) consisted of 8,358 men and 8,645 women (including 3,342 Blacks; 9,048 Whites; 3,132 Mexican Americans; and 1,481 other race/other Hispanic/multi-racial) age 40 years and older. Of these, 2,008 participants reported a history cancer. CRMI was reported more often by participants with a history of cancer (12.8%) than by those without (8.1%). Having had cancer was independently associated with memory impairment (odds ratio, 1.66; 95% CI, 1.41 to 1.96). Socioeconomic status and demographic factors (e.g., age, annual household income and general health) predicted higher risks of memory impairment ($p<0.05$ for all). Participants less than 55 years ($p<0.004$), with higher income ($p<0.01$), and good to excellent general health ($p<0.002$) reported more memory problems.
Conclusions: Memory impairment is a significant side effect of cancer/cancer treatment. Socioeconomics and demographics predicted higher risks of CRMI.

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PALONOSETRON IN THE PREVENTION OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA TREATED WITH HIGH DOSE METHOTREXATE

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Objective: Evaluate the antiemetic effect of palonosetron (5 μg/kg) given once 0.5 h before start of 24-hour infusion with high dose methotrexate (HD-MTX) (5 g/m2) in children with acute lymphoblastic leukemia (ALL).
Methods: From January 2010 until December 2010, 138 courses, correspinding to 53 children, were included from all four Danish Childhood Cancer Centers. Information regarding emetic episodes, rescue treatments (any extra antiemetic medication) and nausea were recorded by patients/parents and nurses on questionnaires.

Results: The primary end point was complete response (no emetic episodes and no rescue treatments). This was achieved in 86.8% of patients in the acute phase (0–24 h post-chemotherapy) and 60.4% of patients in the delayed phase (24–66 h post-chemotherapy). 94.3% of the patients were completely free of emetic episodes in the acute phase, while the same is true for 88.7% in the delayed phase. 90.6% of the patients were completely free of rescue treatments in the acute phase, while the same is true for 66.0% in the delayed phase. A single patient experienced more than mild nausea in both the acute and delayed phases.
Conclusions: This study indicates that a single dose of palonosetron is effective in preventing chemotherapy-induced nausea and vomiting in children with ALL treated with HD-MTX. Introduction of palonosetron as standard antiemetic treatment in these children would mean less use of antiemetic medication, fewer intravenous administrations and fewer disturbances for children and parents and finally a reduced workload for health care workers.

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BREAST CORE BIOPSY—INFORMATION NEEDS FROM PATIENTS' POINT OF VIEW

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Objective: To evaluate the core biopsy experience of patients with locally advanced breast cancer (LABC) and their perceived information needs.
Methods: Questionnaires ensuring anonymity were mailed to breast cancer patients seen from March 2009 to September 2010 at LABC clinic of BC Cancer Agency-Fraser Valley Centre. Patients' breast core biopsy experiences obtained at either LABC clinic or at community radiology centres were compared for varying levels of support in these facilities.
Results: Twenty-seven of thirty-nine questionnaires were returned. Fourteen patients indicated receiving information from oncology nurse navigator. These respondents were grouped as "navigated" (group-N) vs 13 others (group-O). Adequate information received prior to and after the biopsy was indicated as 93% and 100% for group-N vs 77% and 77% respectively for group-O. Almost all patients were satisfied with information given regarding the nature of core biopsy. Preferred format of information were: written at the time of booking (66%) and oral during the procedure (59%). Only 22% preferred information via internet. Written information regarding contact person, signs of infection, and how to look after the biopsy site was desired for post biopsy care. 86% of group-N agreed that contact information was given regarding concerns post biopsy; vs only 62% of group-O. All group-N patients understood steps that would take place if biopsies showed malignancy, vs only 46% of group-O.
Conclusions: Patients appeared to be better informed with the presence of oncology nurse navigator. Written and oral information were important at the time of booking, during and after procedures.

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ACUPUNCTURE AS A COMPLEMENTARY THERAPY IN OPIOID-INDUCED NAUSEA AND VOMITING

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Purpose: In this prospective study we assessed the effectiveness of acupuncture-point stimulation on opioid-induced nausea and vomiting in cancer patients.
Materials and methods: The study was performed in 18 cancer patients who visited the pain management department of a district hospital. These patients suffered from persistent nausea and had no benefit from the standard antiemetic agents, including corticosteroids, antidopaminergics and 5-HT_3R-antagonists. Acupressure was made by a stimulation of PC 6 acupoint (anterior surface of the forearm, approximately three finger width up from the crease of the wrist between the tendons of the palmaris longus and flexor carpi radialis) using a small magnet device which was replaced every week for one month. We assessed the episodes of nausea and vomiting for one month before and after the addition of acupressure treatment.
Results: The therapeutic approach was well accepted by the overall patients. An evident improvement more than 50% in the occurrence of nausea and emesis compared with the pretreatment period was achieved in 15/18 (83%) and 10/18 (55,5%) patients respectively. The total number of nausea (78±29 versus 33±18) and vomiting (19±7 versus 10±7) episodes were reduced with the acupressure technique at a significant level ($p<0{,}001$, $p<0{,}001$)
Conclusions: Acupuncture is a safe medical procedure with minimal side effects.
PC 6 stimulation seems to be an effective complementary intervention for cancer patients under opioid medication who do not respond adequately to drug therapy.

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INHIBITION OF NFKB AMELIORATES LONG TERM RADIOTHERAPY-INDUCED MUCOSITIS

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Introduction: Gastrointestinal mucositis is a major clinical problem caused by cytotoxic therapies. Previous research has shown that NFκB and Cox-2 are involved in the development of mucositis. NFκB plays a key role in the augmentation of downstream events, however, the role of NFκB has yet to be fully examined as a possible preventative measure of mucositis. Therefore the aims of this study were to characterise the effect of NFκB inhibition following fractionated radiotherapy.
Methods: 101 female DA rats were fed a diet containing either an NFkB inhibitor or control. Rats then underwent fractionated radiotherapy 2.5 Gy/fraction/3× week) for up to 6 weeks. After each week groups of rats were killed and gastrointestinal tissues collected for analysis. Samples of duodenum were investigated using standard histopathological stains. NFκB, Cox-1 and Cox-2 expression were investigated using immunohistochemistry.
Results: Inhibition of NFκB improved histopathology and organisation of goblet cells in rats receiving 4–6 weeks (long term) of fractionated radiotheraoy. In addition, inhibiting NFκB significantly reduced ($p<0.01$) NFκB expression in the crypts of rats receiving long term fractionated radiotherapy. Expression of Cox-2 was significantly decreased ($p<0.05$) in the crypts and blood vessels ($p<0.01$) of rats receiving long term fractionated radiotherapy. Cox-1 expression was not altered.
Conclusion: This study has shown that NFκB is a potential target to ameliorate the development of mucositis following long term radiotherapy. Inhibition of NFκB significantly lowers the expression of Cox-2 and improves histopathological measures of damage. Further studies are now warranted to fully characterise the inhibitory mechanisms.

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CAREGIVERS AND ONCOLOGICAL PATIENTS: CHANGES IN THEIR RELATIONSHIP

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Objectives: Our purpose was to identify feelings and changes experienced by caregivers when their partner was diagnosed with cancer and to point out the eventual consequences it may have on their physical and physco-social wellbeing.
Method: Our sample consisted of 49 caregivers (25 males and 24 females, mean age 43 years, range 19–75). 46% caregivers were the patient's partner and 26% the children. In order to asses caregivers' quality of life we used a semi-structured interview administrated according to the brief version of the WHOQOL test (Murphy, 2000).
Results: In 38% cases the caregivers' feelings were mainly negative (anxiety, sadness and despair..). In 16% cases their feelings were positive (hope and the desire to do all that is possible), and in 46% cases the feelings were both positive and negative.
Eventhough the illness of their partner causes a series of positive changes in their relationship with the patient, caregivers described a remarkable reduction in their own quality of life.
Conclusions: Oncological disease has significant consequences on the quality of life and emotions of both patients and their caregivers.
The statistical analysis, conducted by Spss, shows a significant correlation ($p<0.04$) between the level of caregivers' physical quality of life and their awareness of changes in the relationship with the patient.
Future research could be useful to assess the nature of this interdependence and to analyse the features of these changes.

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A GRAPHICAL REPRESENTATION OF DISEASE IN THE RELATIONSHIP BETWEEN PATIENT AND CAREGIVER

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Objectives: Cancer has an important impact on both patient and people with whom he shares experiences or important relationships (caregiver).
Our aim was to assess the caregiver's involvement in the care of patient and to identify the impact of this in their relationship.
Method: Sample consisted of 41 caregivers (13 males, 28 females, mean age: 56 years, range 37–78).
To assess the perception of a shared emotional suffering and how much the disease influenced their everyday life, we asked caregivers to undergo a projective test. They had to represent, with two circles, the patient and themselves and include in the drawing their partner's disease.

Results: In 65% cases, to underline a strong relationship with the patient, caregivers drew two close circles: in 41% tests these circles were overlapping, in 24% they were at a tangent.
In 71% cases caregivers consider disease as something in common with patient: in 31% cases disease is outside the circles but very close to both patient and caregiver while in 40% of representations it is inside, between them.
Only 9 caregivers attributed the disease to the patient alone.
Conclusions: The test's psychological interpretation is that disease has a significant impact on both patient and his caregiver's life. Caregivers are affected by cancer's consequences and consider sufference as something in common with patient.
With additional research we would like to identify the aspects of a caregivers' life most affected by the illness and hence be able organsise psychological support activities for both patients and their caregivers.

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"MENS SANA IN CORPORE SANO": IS IT ALSO TRUE FOR ONCOLOGICAL PATIENTS?

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Objectives: The aim of this research was to identify the main difficulties that cancer patients meet following diagnosis and subsequent therapies.
Exploiting bio-psycho-social models, this study tried to evaluate the quality of life of patients and to underline correlations between physical discomfort, psychological, relational and environmental wellbeing.
Method: Sample consisted of 72 cancer patients undergoing chemotherapy (22 males, 50 females, mean age: 55 years, range 29–78).
A semistructured interview was conducted to identify the main practical and relational problems.
The short version of the WHOQOL test (Murphy, 2000) was administered to asses their quality of life.
Results: Main practical difficulties were related with the organization of one's work (32%) and consequent reduction in income (12%).
Although 75% patients revealed an acceptable quality of life, 13 referred significant physical difficulties, and 9 important psycho-social problems. 6 patients manifested both physical problems together with psychological or relational difficulties.
Conclusions: Cancer involves all aspects of a patient's life reducing his quality of life and causing economic and organisational difficulties within the family which must be resolved.
The statistical analysis, conduced with Spss, demonstrated a highly significant correlation ($p<0.01$) between all areas of well-being (physical, psychological, relational and environmental), confirming that there is a mutual relationship between the state of physical health and psycho-social conditions.
For these reasons it is necessary to improve patients' psycho-social conditions hence enabling them to cope, more efficiently, with their disease and the physical consequences of treatment.

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SALIVA SUBSTITUTES

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Introduction: Saliva substitutes are frequently applied for the alleviation of symptoms associated with radiation-induced xerostomia. Research on saliva substitutes has focussed on the evaluation of both the laboratory and clinical performance of saliva substitutes, yet due to the vast number of saliva substitutes available, scientific evidence is hard to infer. The aim of this lecture is to present a review on the scientific evidence available on the performance of saliva substitutes for the treatment of radiation-induced xerostomia, focussing on their clinical acceptance and their influence on enamel and dentin de- and remineralisation.
Methods: The review included laboratory studies investigating the influence of saliva substitutes on tooth tissue de- and remineralisation, and clinical studies evaluating the acceptance of saliva substitutes in patients with radiation-induced xerostomia. For identification of relevant studies, a *PubMed* search was conducted, applying the query terms "artificial saliva", "artificial saliva" and xerostomia, "saliva substitute", and "saliva substitute" and xerostomia. A total of 24 laboratory and 16 clinical studies were rated as relevant for the topics evaluated, and were included in the review. Clinical studies were ranked according to their scientific quality using the scale introduced by Jadad.
Conclusions: Concerning de- and remineralisation of tooth tissues, the results of this review underline the relevance of including fluoride, calcium and phosphate into saliva substitutes. With regard to the clinical acceptance of saliva substitutes, it appears that successful treatment of xerostomia is very individual. Nevertheless, mucin-based saliva substitutes seem to have higher clinical acceptance than those based on carboxymethylcellulose.

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PALLIATION OF SYMPTOMS IN RECURRENT CERVICAL CANCER PATIENTS

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Objectives: Women in developing countries present with advanced disease due to social stigma and lack of awareness. Most women are malnourished and anemic. The failure rates are high with locally advanced stages and anemia. The most common symptoms in recurrent cervical cancer patients are vaginal discharge, bleeding and pelvic pain. We conducted a study to assess the feasibility of palliative concurrent chemo re-irradiation for symptom control.
Methods: 16 patients with recurrent cervical cancer were chosen. All patients had complaints of foul smelling vaginal discharge, bleeding and pelvic pain. All patients underwent hyperfractionated radiotherapy to the pelvis (encompassing central disease only). Radiotherapy dose was 16 Gy/2 days(8 Gy - 2 # delivered 6 hours apart, on days 1,2). Paclitaxel (30 mg/m^2) was given on day 1 and 2. All patients underwent vaginal douche with Metronidazole during the hospitalization and were advised to continue at home.
Results: Palliation was assessed by visual analog scale (VAS) for literate patients and by Happy face–sad face scale (HFSFS) for illiterate patients. Prior to treatment all patients experienced VAS 80–90/HFSFS 4–5. All were available for analysis. 14 out of 16 patients (85.7%) had VAS 10–20/ HFSFS 0, 1, 2 corresponding to good symptom relief. 2 patients had VAS 40–50/HFSFS 2–3. All patients completed the treatment. Patients were symptom free for a median of 44 days (Range 26–65).
Conclusion: This approach is feasible and effective in palliating recurrent cervical cancer patients.

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A SYSTEMATIC REVIEW ON COGNITIVE ASSESSMENT OF PATIENTS WITH CANCER IN PALLIATIVE CARE

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Aim: This review aimed to identify instruments used for cognitive assessment and the prevalence of cognitive dysfunction in this population.
Methods: Search based on the question "What are the instruments used for cognitive assessment of cancer patients in palliative care?" MeSH terms and words related to neoplasm, palliative care, cognition and assessment composed the search strategy performed on Pubmed/Cinahl/Lilacs/Embase/Scopus/Web of Science/ Psycinfo/Cochrane in May 2010. Articles inclusion criteria: palliative cancer patients, instruments for objective measurement of cognitive function and published in English/Portuguese/Spanish. Exclusion criteria: instruments for anxiety/depression/mental disorders/organic changes, case studies and reviews. Studies were analyzed regarding design, instruments characteristics and prevalence of dysfunction.
Results: From 468 abstracts, 24 were selected. Eight were controlled trials, 15 observational studies and 1 validation study. Twenty-one general and specific instruments to assess one or more functions were applied. The Mini-mental State Examination-MMSE (15/24), Trail Making (7/24) and the Wechsler Adult Intelligence Scale (4/24) were the most used. Seventeen tools were paper/pencil, two oral and two computerized tests; 13 captured alterations and only MMSE was previously validated in cancer patients. The prevalence of cognitive dysfunction ranged from 7.4% to 95.0% and deficits in memory and fine motor coordination were the most captured.
Conclusion: A wide range of cognitive dysfunction prevalence was observed. Memory and fine motor coordination were the most affected. Only one instrument was validated to palliative care cancer patients and few studies were found, which weaken the data. Validated instruments can provide more accurate cognitive assessment of cancer patients in palliative care.

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EARLY IDENTIFICATION OF CARDIOTOXICITY BY ANTIBLASTIC TARGET THERAPY: A DIASTOLIC ECOCARDIOGRAPHY MESAUREMENT

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We prospectively examined cancer patients undergone target therapy with 3 different antiblastic drugs (avastin, trastuzumab and sunitinib). We used contrast echocardiography at basal time and subsequentelly at fix time to early identify cardiotoxicity, sintomatic or asintomatic.
50 patients were prospectively enrolled from January 2009 to September 2010 and left ventricular eiection fraction

(LVEF) was measured using echocardiographic contrast media (SonoVue 0,5 ml).
Diastolic function was assessed using pulse-wave tissue Doppler. A pre-specified PW-TDI E′ cut off (<5 cm/sec) was used to define reduced diastolic function. Cardiotoxicity was identified when LVEF was less 15 points compared with starting measurement or a drop >10 points if the last LVEF is less than 50%.
After an average of 3,7 ecocardiograms per patients we found 4 patients (8%) developing asintomatic cardiotoxicity. All these patients showed reduced diastolic function before starting cancer treatment.
Exactly 2 patients were treated with trastuzumab and 2 with sunitinib.
A baseline reduced diastolic function (E′ <5 cm/sec) conferred 100% sensitivity and 93% specificity to predict cardiotoxicity.
This predictive parameter may lead to an early change in antiblastic treatment expecially in asintomatic cardiac events.

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EXPERIENCE IN INDIA WITH HEAT-MOISTURE EXCHANGER AND FILTER REUSABLE (HMEF-R)—PROSPECTIVE STUDY OF 128 TOTAL LARYNGECTOMEES

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At present, the only effective nonpharmaceutical treatment of pulmonary problems in patients after total laryngectomy is HMEF-R.
Objectives: To study the effect of Heat and Moisture Exchanger use on pulmonary symptoms in laryngectomized individuals mostly representing a group with low socioeconomic status.
Patients and measures: One hundred and twenty eight laryngectomized individuals without any HME experience, after 3 months post laryngectomy were included. The average age was 55.3 years (range, 31 to 85 years) with male (102) to female (26) ratio were 3.9: 1. The standard questionnaire was used to assess 3 months results and sheets recorded the Mucous Production, Crust Formation around the stoma, Cough Frequency, Frequency of Cleaning the Stoma, Breathlessness while climbing steps &/or walking.
Result: Statistically the mean scores for all the parameter were found to be significant ($p<0.001$). HMEF-R use significantly reduced the pulmonary problems and improved psychosocial function and post operative quality of life.
Conclusion: Considering the significant issues of working patterns, standard of living and literacy of patients from a developing country like India, presently available design of HME system is not markedly compatible. So, newly design HMEF-R system which is easy to wear, non adhesive, washable, reusable, easy carry and low cost.

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VITAMIN D DEFICIENCY AND ENDOCRINE ABNORMALITIES IN ADVANCED CANCER PATIENTS

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Background: We investigated the frequency of vitamin D deficiency and other endocrine abnormalities in cancer patients with fatigue or cachexia.
Methods: A retrospective chart review of 100 consecutive cancer patients who have completed a workup including vitamin 25 (OH) D, bioavailable testosterone (male patients only), thyroid stimulating hormone (TSH), AM cortisol, morphine equivalent daily dosing (MEDD) and symptom assessment (Edmonton Symptom Assessment Scale (ESAS)).
Results: 67 patients were male and 33 female. Median age was 60 (range 27–91) and predominantly white 66/100 (66%). Colorectal (30, 30%), and lung (22, 22%) cancer were common. 47 patients (47%) had 25 (OH) D levels <20 and 70 (70%) had levels <30. Vitamin D deficiency was more common in patients with darker skin including African-Americans 16/19 (84%), Hispanics/South Americans 8/8 (100%), East Indians/Middle Eastern decent 2/3 (67%) vs. 25/66 Caucasians (38%) ($p=0.02$). Only 13/70 patients (19%) with low vitamin D were on supplementation. No significant association was noted between vitamin D and symptoms. However, among 53 patients on strong opioids (MEDD > 0), vitamin D levels were positively associated with bioavailable testosterone (Spearman's Rho=0.33, $p=0.05$). 40/55 male patients (73%) were hypogonadic (biovailable testosterone <50), 13/99 patients (13%) had signs of hypothyroidism (TSH >5.5), and no patients had suppressed AM cortisol.
Conclusions: Vitamin D deficiency, hypogonadism in males, and hypothyroidism were frequently observed in advanced cancer patients. Patients with low vitamin D levels had decreased levels of testosterone. The impact of vitamin D deficiency on symptom burden is unclear.

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UNDOCUMENTED ALCOHOLISM AND ITS RELATIONSHIP WITH TOBACCO AND ILLEGAL DRUG USE IN ADVANCED CANCER PATIENTS

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Background: The purpose of our study was to determine the frequency of undiagnosed alcoholism among advanced cancer patients referred to palliative care and explore the relationship with alcoholism, tobacco abuse, and illegal drug use.
Methods: We reviewed 665 consecutive charts and identified 598 patients (90%) who completed the CAGE questionnaire (**C**ut down, **A**nnoyed, **G**uilty, **E**ye-opener) and 100 consecutive CAGE positive (CAGE+) and negative (CAGE-) patients. Tobacco and illegal drug use, Edmonton Symptom Assessment Scale, and Morphine Equivalent Daily Dose (MEDD) were collected.
Results: Frequency of CAGE+ in our palliative care population was 100/598 (17%). Only 13/100 (13%) among these CAGE+ patients were documented to have been identified as alcoholics prior to palliative care consultation. CAGE+ patients were younger (58.6 versus 61.3 years, $p=0.07$), predominantly male (68/100 versus 51/100, $p=0.021$), more likely to have a history of tobacco use (86/100 versus 48/100, $p<0.001$), be actively using nicotine (33/100 versus 9/100, $p=0.02$), and have a history of illegal recreational drug use (17/100 versus 1/100, $p<0.001$). Pain and dyspnea were worse in patients with a history of nicotine use. Both CAGE+ patients and patients with a history of tobacco use were more frequently on strong opioids at the time of palliative care consultation.
Conclusion: Our findings suggest that alcoholism is highly prevalent and frequently under-diagnosed in patients with advanced cancer. CAGE+ patients were more likely to have a history of, or actively engage in, smoking and illegal recreational drug use placing them at risk for inappropriate opioid escalation and abuse.

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5-HT_3 RECEPTOR ANTAGONIST SELECTION WITHIN TRIPLE ANTIEMETIC REGIMENS AND RISK OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING IN PATIENTS WITH MULTIPLE CANCERS

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Objective: Evaluate the likelihood of an uncontrolled chemotherapy-induced nausea and vomiting (CINV) event following antiemetic prophylaxis with palonosetron + aprepitant + dexamethasone (group 1) versus any of ondansetron, granisetron, or dolasetron + aprepitant + dexamethasone (group 2) among single-day highly emetogenic chemotherapy (HEC) cycles in patients with multiple cancers.
Methods: Single-day HEC cycles (a gap of atleast 5 days between 2 administrations) among patients with multiple cancers and initiating antiemetic prophylaxis with group 1 versus group 2 between 1/1/2006–6/30/2010 were identified from the IMS LifeLink claims database. Risk for an uncontrolled CINV event (ICD-9-CM codes for nausea, vomiting, CPT codes for hydration, rescue medications, and/or use of antiemetic therapy from days 2–5 following HEC administration) was analyzed at cycle level using a logistic multivariate regression model.
Results: A total of 2,218 group 1 (989 patients) and 524 group 2 cycles (293 patients) were analyzed. Number of HEC cycles [mean (sd): 2.3 (1.9) vs. 1.9 (1.4); $p=0.0003$] was statistically higher for group 1 patients; age, gender distribution, and Charlson comorbidity score were similar between the groups. Versus group 2 cycles, group 1 cycles had a significantly lower unadjusted risk of an uncontrolled CINV event (20.6% vs. 26.3%; $p=0.0039$), while the regression analysis predicted a 25% lower risk for group 1 cycles [Odds Ratio: 0.75 (95% CI: 0.60–0.94); $p=0.011$].
Conclusion: In this retrospective claims analysis, patients with multiple cancers receiving single-day HEC and palonosetron based triple drug prophylaxis had a lower risk for uncontrolled CINV versus the other 5-HT_3-receptor antagonists.

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EFFECTIVENESS OF A PALLIATIVE CARE CONSULTATION TEAM IN IMPROVING CANCER-RELATED SYMPTOMS FROM BRAZILIAN OUTPATIENTS

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Objectives: To evaluate the effectiveness of a palliative care (PC) consultation team in reducing some cancer-related symptoms in an outpatient setting from Brazil.
Methods: Among 1,028 Edmonton Symptom Assessment System (ESAS) scales, a total of 232 met the eligible criteria: different patients with at least two consecutive ESAS evaluations. Changes in symptoms

at follow-up visit were analyzed using Wilcoxon signed-rank paired test. The symptom subtraction indexes (SSI) (follow-up scores minus baseline scores) were calculated and then analyzed with Spearman's correlation.

Results: Median scores at baseline and follow-up visits were pain 6 and 5 ($P<0.0001$), fatigue 6 and 4 ($P<0.0001$), nausea 6 and 4 ($P<0.0001$), depression 6 and 5 ($P<0.0001$), anxiety 7 and 5 ($P<0.0001$), drowsiness 6 and 3.43 ($P<0.0001$), anorexia 6 and 5 ($P<0.0001$), well-being 6 and 4 ($P<0.0001$), dyspnea 6 and 4 ($P<0.0001$), and total symptom distress score 26 and 22 ($P=0.0066$). All the SSIs positively correlated with well-being-SSI, but fatigue-SSI ($r=0.331$, $P<0.01$), and anorexia-SSI ($r=0.367$, $P<0.01$) were the most important correlations. Other important SSI correlations were: fatigue-SSI and anxiety-SSI ($r=0.286$, $P<0.01$), and fatigue-SSI and dyspnea-SSI ($r=0.282$, $P<0.01$).

Conclusions: Our PC team was able to provide a significant improvement in the symptoms evaluated. The well-being-SSI was positively correlated with all the SSIs, verifying that the control of symptoms is essential for the patient well-being. The adequate/inadequate control of specifically symptoms seems to indirectly improve/worsen other symptoms.

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DEGREE OF FREEZING DOES NOT AFFECT FROZEN GLOVES EFFICACY FOR PREVENTION OF DOCETAXEL-INDUCED NAIL TOXICITY IN BREAST CANCER PATIENTS

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Objectives: The preventive effect of frozen gloves (FG) for docetaxel-induced nail toxicity (DNT) was compared using a standard (−25~30°C) or more convenient (−10~20°C) preparation. The primary endpoint was DNT occurrence within 4 months. Secondary endpoints were grade 2 or higher DNT occurrence, degree of docetaxel exposure until DNT occurrence and discomfort from FG.

Patients and methods: Breast cancer patients receiving docetaxel were eligible for this self-controlled trial. Each patient wore an FG (prepared at −10~20°C for 90 minutes) for 60 minutes with no replacement on the right hand. The left hand was protected by standard methods (prepared at −25~30°C overnight and wore for 90 minutes in total with replacement at 45 minutes) as the control. DNT and adverse events related to FG were graded at each cycle by CTCAE v3.0. The pharmacokinetics of docetaxel were also evaluated.

Results: From 23 patients enrolled between December 2006 and June 2010, 16 who received docetaxel for longer than 4 months were evaluated. The median accumulated docetaxel dose was 700 mg/m^2 (340–1430 mg/m^2). Within 4 months of FG use, none developed protocol-defined DNT in either hand. Two patients (13%) developed DNT at 220 and 222 days respectively, both at −10~20°C. In the control hand at −25~30°C, discomfort occurred in 92% of the cycles, compared to 15% in the experimental hand at −10~20°C. Five patients (22%) experienced pain at −25~30°C but none did at −10~20°C.

Conclusions: A convenient preparation of FG at −10~20°C is as effective as standard preparation at −25~30°C, with significantly less discomfort.

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THE NUCLEAR PHARMACISTS AND THE IMPLEMENTATION OF THE QUALITY ASSURANCE SYSTEM IN NUCLEAR MEDICINE

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Purpose: The purpose of this article is to illustrate the role of the Nuclear Pharmacists in the implementation and management of the quality assurance system in a Department of Nuclear Medicine.

Methods: An important aspect of a quality system is to work according to unambiguous Standard Operating Procedures (SOPs). A list of Standard Operating Procedures is given in the Quality Assurance Manual. The purpose of a SOP is to carry out the operations correctly and always in the same manner. In the writing of SOP it's necessary to establish what is within the scopes of each role, when and how these activities need to be executed, the used equipment and the required documents.

Results: Written *Standard Operating Procedures* define in details the execution of every single process and concern joint procedures, such as:
cleaning of locals (SOP PL)
dressing and admittance to clean room (SOP VAL)
Materials Handling and Storage (SOP GM)
Radiopharmaceuticals preparation (SOP PR).
Our SOP contain:

Operating instructions: detailed description of the execution and of the control of activities, highlighting any exception and/or critical point;
Documents: among which a flowchart with an activities sequence and a "staff training" form which will be part of every employer's "training file".
Conclusions: The SOPs we obtained can be applied to very different Department of Nuclear Medicine.
Radiopharmacy in Nuclear Medicine cooperates with other professional figures in order to assure quality, efficacy and safety of Radiopharmaceuticals through the making of a Quality Manual and the management of Quality Assurance system.

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COGNITIVE-BEHAVIOR GROUP INTERVENTION FOR FAMILY MEMBERS OF PATIENTS WITH METASTATIC CANCER: A REPORT OF A CONTROLLED STUDY

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Objective: To assess the effect of cognitive-behavior group intervention on the psychological distress and adjustment of relatives of cancer patients with advanced disease.
Methods: Forty one caregivers of cancer patients with advanced disease participated in the intervention group and 33 served as controls. Participants completed pre- and post-intervention, and a 4-month follow-up questionnaire consisting of the Brief Symptom Inventory (BSI), Psychological Adjustment to Illness scale (PAIS), Mini sleep questionnaire (MSQ), Fatigue Symptoms Inventory (FSI) and Multidimensional Scale of Perceived Social Support (MSPSS). Participants also reported adherence to home practice.
Results: While the two groups were similar on T1 in all study variables, at T2 the intervention group scored significantly lower than the control subjects on the BSI and the PAIS and recorded fewer sleep difficulties and lower fatigue. The positive changes were preserved on T3 measure for the intervention group, while conditions of the control group worsened. Improvement in the intervention group was associated with higher compliance with home practice and with increase in perceived social support.
Conclusion: This study provides evidence for the positive effect of a cognitive-behavior group intervention on the family members of cancer patients with metastatic disease; the effect lasted for 4 months after the intervention ended..

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ACUTE-PHASE REACTIONS: RANDOMISED, PHASE 3 STUDY IN PATIENTS WITH CASTRATE-RESISTANT PROSTATE CANCER AND BONE METASTASES RECEIVING ZOLEDRONIC ACID OR DENOSUMAB

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Objectives: IV bisphosphonates are used to treat bone metastases and prevent skeletal-related events in patients with castrate-resistant prostate cancer. One of the most common adverse events (AEs) of zoledronic acid (ZA) is the development of an acute-phase reaction (APR) in up to 1/3 of patients. This analysis examines incidence of APR (flu-like syndrome including pyrexia, chills, flushing, bone pain, arthralgia and myalgia during the first 3 days after initial treatment).
Methods: Eligible patients randomly received IV ZA 4 mg (per ZA label) or subcutaneous denosumab 120 mg q4w in a double-blind fashion. Safety analyses were conducted in patients who received ≥1 dose of denosumab (N=943) or ZA (N=945). Patient records were searched for AEs and serious AEs that occurred during the first 3 days, using 37 prespecified MedDRA 12.1 preferred terms indicating potential APR.
Results: APR-related AEs occurred in fewer patients in the denosumab group (8.4%) versus the ZA group (17.8%; $P < 0.0001$). No events were attributed to denosumab (those reported were likely due to underlying advanced cancer, chemotherapy or other comorbidities). The most common APR AEs included pyrexia (0.5% denosumab, 3.8% ZA), asthenia (0.8% denosumab, 2.4% ZA), bone pain (0.6% denosumab, 2.3% ZA), influenza-like illness (0.1% denosumab, 2.3% ZA), and fatigue (1.7% denosumab, 1.3% ZA). One patient (0.1%) in the denosumab group and 3 patients (0.3%) in the ZA group reported serious AEs associated with APR during the first 3 days.
Conclusions: Patients treated with denosumab experienced significantly fewer overall APR AEs than patients receiving ZA.

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TE ADAPTABILITY OF THE DISTRESS THERMOMETER FOR SCREENING FOR DISTRESS IN ISRAELI CANCER PATIENTS WITH ADVANCED DISEASE

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Objectives:
(1) To assess the adaptability of the Distress thermometer (DT) to screening for distress in cancer patients with advanced disease.
(2) To assess levels of distress in Jewish and Arab cancer patients with advanced disease.
Methods: Participants were 260 patients with advanced disease. Participants completed the Israeli DT, a problem list, Hospital Anxiety and Depression Scale (HADS), and the Brief Symptom Inventory (BSI-18); a DSM-IV-based clinical diagnostic interview was completed with a subsample. The response rate was 97%.
Results: Receiver operating characteristic (ROC) curve of DT scores yielded area under the curve (AUC) of 0.69 as against HADS, and of 0.81 as against BSI-18. For the clinical interview, AUC for diagnosis of depression was 0.83 and for anxiety 0.85. The Jewish participants reported higher distress than the Arab participants, and the ROC properties were markedly higher for the Jewish subgroup alone.
Conclusions: The adapted DT was efficient for detecting emotional distress in Jewish and Arab cancer patients in Israel. Cultural aspects related to distress should be taken into account for administration of the DT in multicultural societies.

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PHASE III DOUBLE-BLIND PLACEBO-CONTROLLED STUDY EVALUATING $5HT_3$ ANTAGONIST + DEXAMETHASONE +/− APREPITANT IN GERM CELL TUMORS RECEIVING 5-DAY CISPLATIN CHEMOTHERAPIES

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Objectives: To compare aprepitant versus placebo + standard antiemetic prophylaxis (a standard $5HT_3$ antagonist + dexamethasone) in preventing chemotherapy-induced nausea and vomiting (days 1–5) measured by the proportion of patients with a complete response (no emetic episodes or use of rescue medications). Secondary endpoints were nausea based on visual analog scale (VAS) and symptoms measured by M.D. Anderson Symptom Inventory.
Methods: Eligibility—Germ cell tumor patients receiving 2 identical courses of 5 day cisplatin combination chemotherapy. Stratification—Chemo-naïve versus prior chemotherapy. $5HT_3$ days 1–5 + dexamethasone 20 mg day 1–2 utilized in both arms. Randomization to either aprepitant (125 mg day 3, 80 mg days 4–7) or placebo during first course, with crossover to opposite therapy with second course. Blinded dexamethasone, 8 mg bid or 4 mg bid days 6–7 for placebo or aprepitant and 4 mg bid day 8.
Results: 70 patients entered, 68 evaluable. 58 were chemo-naïve. 60 received bleomycin, etoposide, cisplatin. 35 received aprepitant with first course, 33 placebo. 47% achieved C.R. with aprepitant, 19% with placebo ($p< 0.0001$). 32 (47.1%) had ≥1 emetic episode during placebo cycle versus 11 (16.2%) with aprepitant. 49 patients expressed a cycle preference. 38 preferred aprepitant cycle; 11—placebo ($p<0.0001$). No statistical difference in VAS for nausea or M.D. Anderson symptom scores, but numerically improved with aprepitant. No observed toxicity with aprepitant versus placebo.
Conclusion: Aprepitant + $5HT_3$ + dexamethasone showed a statistically significant improvement in CR rate. Patients strongly favored aprepitant cycle.

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INCIDENCE OF PAIN IN PATIENTS PRESENTING TO A REGIONAL CANCER CENTRE IN SOUTH INDIA

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Pain is considered as the fifth vital sign. In spite of this it is very often under diagnosed, under assessed and under treated. We conducted a study whereby we recorded the pain score in patients reporting for initial registration at a regional cancer centre. We studied 227 patients (126 female and 101 male patients) over a period of one week at the time of registration, out of which 162 had pain (71.4%). Of these only 69 (42%) patients were on some kind of pain medication. This study shows that pain is often under treated and hence it is good to involve pain and palliative care services at an early stage. In developing country like India since more than 75% of cancer patients present to the specialty hospital with advanced stage of disease for whom curative treatment does not have much role and only palliative care will help these groups. Hence early referral to pain and palliative care services will benefit the patients.

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A RISK STRATIFICATION SCHEMA FOR PREDICTING DIABETES MELLITUS IN CANCER SURVIVORS

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Introduction: Identifying cancer survivors (CS) who are most at risk for modifiable conditions, such as diabetes mellitus (DM), can ensure that survival gains from cancer advances are not lost because of competing health risks. We aimed to identify factors associated with increased risk of DM among CS and develop a stratification system to predict DM risk in CS.
Methods: Using survey data from NHANES, we identified 2,374 CS and 23,832 noncancer controls (NCC). Regression was used to determine characteristics that were correlated with elevated relative risk (RR) of DM. A stratification system was constructed to estimate prevalence of DM in CS.
Results: Mean age was 45, 51.9% were female, and 88.6% were White. DM was more prevalent in CS (13.2% of CS vs. 6.9% of NCC, $p<0.01$). Multivariate analyses revealed the following risk factors for DM: age ≥60 (RR 2.19); racial minorities (RR 1.65); < highschool education (RR 1.87); obesity (RR 5.90); history of ischemic heart disease (RR 2.20); history of congestive heart failure (RR 2.95); systolic blood pressure ≥120 mmHg (RR 1.66); and triglyceride level ≥150 mg/dL (RR 1.49). A stratification schema for DM in CS was devised (Table).
Conclusions: Through identification of risk factors for DM, a stratification schema was developed, allowing for identification of CS who may benefit most from appropriate DM preventive care.

	Risk Score					
	≤1	2	3	4	5	6+
Prevalence of Diabetes (%)	4.3%	10.8%	17.2%	32.4%	45.6%	67.8%

[Risk of Diabetes in Cancer Survivors]

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PREDICTING THE RISK OF CARDIOVASCULAR COMORBIDITY IN CANCER SURVIVORS

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Introduction: Limited data exist on how to identify cancer survivors (CS) at the greatest risk for cardiovascular disease (CVD). We aimed to characterize the factors associated with ischemic heart disease (IHD) and congestive heart failure (CHF) among CS and develop a stratification schema for predicting CVD risk in CS.
Methods: CS and noncancer controls (NCC) were identified from the NHANES survey. Regression was used to determine factors associated with increased relative risk (RR) for IHD and CHF. Based on a system that assigned 1 point for each risk factor, a stratification schema was devised that correlated risk score with prevalence of CVD.
Results: We included 2,734 CS and 23,832 NCC:mean age 45, 48.1% male, and 88.6% White. Compared to NCC, CS were more likely to report IHD (8.5 vs. 2.9%, $p<0.01$), CHF (7.1 vs. 2.0%, $p<0.01$), or both (3.2% vs. 0.67%, $p<0.01$). CVD risk factors included:age ≥60 (RR 6.4); male (RR 1.8); racial minorities (RR 1.7); separated or widowed (RR 2.4); < than highschool (RR 1.5); and income <$20,000 (RR 1.9). A cardiovascular risk stratification schema for IHD and CHF in CS was developed (Table).
Conclusions: A stratification schema may be helpful in developing a risk-based approach to cardiovascular preventive strategies for CS.
[Table]

	Risk Score			
Comorbidity	**≤2**	**3**	**4**	**5+**
IHD	0.8%	6.4%	13.6%	19.5%
CHF	0.4%	6.2%	10.6%	16.7%
IHD and CHF	0.2%	2.2%	3.2%	9.1%

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LASER THERAPY FOR MUCOSITIS: CLINICAL AND HISTOLOGICAL FINDINGS UNDER DIFFERENT IRRADIATION PROTOCOLS IN HAMSTERS

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Toxic and dose-limiting effects of anti-neoplastic agents in oral cavity are frequently observed during cancer therapy and mucositis is the most debilitating one. This oral condition restricts nutrition, causes discomfort, severe pain and may determine interruption of cancer therapy. Considering its clinical significance, it is important to find ways to prevent and treat this pathology. This study aimed to evaluate the effects of laser therapy on preventing or reducing chemotherapy-induced mucositis in hamsters. Sixty animals received intra-peritoneal injections of 5-fluorouracil (5-FU) on days 0 and 2, associated with cheek pouches scarification on days 3 and 4. They were divided in 5 groups: I—4 J/cm^2 and II—12 J/cm^2 (685 nm, 35 mW); III—35 J/cm^2 and IV—72 J/cm^2 (660 nm, 100 mW); V—positive control. Groups I to IV were irradiated on days 4, 6, 8, 10 and 12. Six animals from each experimental group were randomly selected for excisional biopsy of their left cheek pouch on days 8 and 12, which were submitted to histological examination. Clinical evaluation were performed on days 6, 8, 10 and 12 based on a 0

(healthy) to 5 (complete ulceration and lost of elasticity) score system. Tests revealed statistical differences between treated and non treated groups ($p<0.05$). It was found that the laser therapy protocols on this study reduced the severity of oral mucositis and accelerated the healing process, with better results obtained using 12 J/cm^2 and 72 J/cm^2.

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OSTEONECROSIS OF THE JAW IN A PATIENT WITH METASTATIC RENAL CELL CARCINOMA (MRCC) RECEIVING SUNITINIB

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Introduction: Sunitinib is a mutlitargeted tyrosine kinase inhibitor that is used for the treatment of mRCC. Oral mucosal "necrosis", gingival necrosis, and jaw«osteonecrosis»have been reported [1–3].
Purpose: A case of osteonecrosis of the mandible in a patient with mRCC receiving sunitininb is presented.
Case report: A female 64 y.o., complained (September 2010) for pain on her mandible, under the denture. In 2002, she was diagnosed with RCC, Stage II, and undergone nephrectomy. In 2006 patient developed lung metastasis and received sunitininb. In 2008 she received T4 for hypothyroidism, while in 2009 she received prednizolone for vascilitis.
Examination revealed necrotic bone on the mandible, without radiographic findings. Osteonecrosis stage II was diagnosed and amoxiciline was administered. Sunitinib was interrupted for one week and was re-introduced in lower dose (37.5 mg/day), when osteonecrosis improved to stage I. Azithromycin was administered for two months, until a bone sequestrum fell off, followed by healing. (December 2010).
Conclusion: The presented osteonecrosis was related to sunitinib, as patient never received bisphosphonates. Education on the osteonecrosis in relation to sunitinib may be significant in the prevention or diagnosis of osteonecrosis, particularly due to the increasing use of sunitinib.
1. Sunitinib Adverse Event: Oral Bullous and Lichenoid Mucositis. Mignogna MD, et al. The Annals of Pharmacotherapy 2009;43 www.theannals.com.
2. Osteonecrosis of the jaw related to sunitinib. Koch FP, et al. Oral Maxillofac Surg 2010;online.
3. Gingival bleeding & necrosis in a patient with renal cell carcinoma, receiving Sunitinib. Nicolatou-Galitis O et al. MASCC Symposium 2010, Vancouver.

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POTENTIAL DRUG INTERACTIONS IN PATIENTS WITH A HISTORY OF CANCER

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Background: Cancer patients (CP) are frequently at risk for drug interactions to compare the prevalence and significance of potential drug interactions (PDI) in CP vs. non-cancer patients (NCP) and identify risk factors associated with PDI in CP.
Methods: Using specialized drug interaction software (iFacts, version 13.10), 4,975 patients were screened for PDI from the National Health and Nutrition Examination. The clinical significance of each PDI was graded on a 5-point scale (1-most significant and 5-least significant). Summary statistics and logistic regression were used to assess the impact of cancer history on risk and significance of PDI.
Results: After screening, 302 CP and 907 NCP were included; mean ages were 62 and 60 years; 44% and 41% were men; 88% and 77% were White, respectively. CP indicated using a mean of 4.5 different medications while NCP reported using 3.8 different drugs. In terms of PDI, 40% and 43% of CP and NCP, respectively, had interactions. Among them, 12% were rated as level 1 in significance in both patient groups. In multivariate analysis, CP were significantly less likely to be at risk for any type of PDI OR=0.71, 95% CI=0.52–0.97, P=0.034) when compared to NCP. Other factors that were associated with PDI in CP were advanced age and low household income. Medications that were most commonly prescribed among CP with level 1 PDI included atorvastatin (5.2%) and digoxin (4.3%).
Conclusions: Although CP are less susceptible to PDI than NCP, prevalence of medication interactions among CP remains suboptimal.

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EFFICAY OF PALLIATIVE RADIOTHERAPY IN LOCAL SYMPTOMS RELIEVE IN PATIENTS WITH MULTIPLE MYELOMA

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Objectives: Multiple Myeloma (MM) develops osteolityc bone lesions that can cause severe bone pain, pathologic fractures and neurologic symptoms due to spinal cord compression or radiculopathy. In our retrospective study we report the effect of radiotherapy on pain reduction, analgesics use and on neurologic symptoms.

Methods: Thirteen patients (age interval 21 to 76, median age 57; men to women ratio 2,3:1) with 21 osteolytic lesions and symptomatic MM have been treated from November 2009 to November 2010 at our department. Irradiated sites included: vertebral column (43%), upper and lower extremities (28%), pelvis (24%) and skull (5%). Median total dose of radiation was 30 Gy (range 12–40 Gy) delivered in a median daily fraction of 4 Gy (range 2–8 Gy).
Results: The local symptoms in the treated areas have been followed with an interview routinely 3 to 12 months after the radiation treatment. Pain was rated using a verbal numerical rating scale (NRS) to assess its reduction from baseline and the need for analgesics. Complete response was found in 67% of treated areas, partial in 29% and one site (5%) had to be retreated. Twenty three percent of the patients stopped using analgesics after the radiation treatment and 46% reduced the dose intake of opioids. Full relief of neurologic symptoms was achieved in 50% of the treated areas, partial in 43% and in 7% there was no neurologic change.
Conclusions: Our study confirms the effectiveness of radiotherapy on pain relief, with a reduction of drug intake and improvement of neurologic symptoms.

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CAN NURSES MANAGE GASTROINTESTINAL SYMPTOMS ARISING FROM PELVIC RADIATION DISEASE?

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Introduction: In Europe and the USA, radiotherapy is used with curative intent for pelvic cancer in more than 300,000 patients annually. The evidence is overwhelming that chronic physical symptoms after pelvic irradiation have a moderate or severe impact on quality of life in up to 50% of survivors. These symptoms are often not acknowledged let alone adequately treated, as comprehensive services for pelvic radiation disease are few.
Aims/method: This prospective, observational, qualitative study assessed whether nurse-delivered care guided by a detailed, peer-reviewed management algorithm dictating investigations and comprehensive treatment pathways, with access to medical support as required, is feasible for patients with radiotherapy induced bowel dysfunction.
Results: A senior nurse's first year experience in post was recorded. 37 women, 75 men, median age 69, 10 previously treated for gastrointestinal, 33 for gynaecological and 69 for urological cancers, median 24 months since radiotherapy were seen. Median of 60 minutes (range 50–75) were required for new and 40 minutes (range 30–65) for follow up consultations. Patients required a maximum of 5 appointments. Ordering investigations, treatment initiation, long term care planning and discharge appeared manageable in 83% patients. Difficulties encountered included lack of formal training in physical examination, not being qualified to prescribe and limited knowledge of modern oncological practice.
Conclusion: An experienced gastroenterology nurse, working with an algorithm which defines practice, can manage care in most patients with mild or moderate chronic symptoms induced by pelvic radiotherapy. Competencies required could be taught by combining Masters level preparation and specialist "coaching".

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SURVIVORSHIP CARE PLAN FOR BREAST CANCER SURVIVORS—WHAT ARE THE PREFERENCE?

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Objectives: The purpose of this study is to explore experiences and concerns of breast cancer survivors (BCS).
Methods: A qualitative approach explored impacts of breast cancer on survivors at differing life stages to determine preferred content and format of survivorship care plan (SCP). Semi-structured interviews were audio-recorded with women who had non-metastatic breast cancer, 3–48 months post-treatment and were 18–75 years of age. Groups were stratified by age into <44, 45–54, 55–64, and >65. Transcripts were subjected to thematic and content analysis by age group.
Results: The impacts of breast cancer were broad and varied by age group for the 16 women in the study. Physical, emotional and social effects were more intense in younger patients with women in the middle age group experiencing more concerns centered on financial and social support issues. Fatigue and fear of recurrence were the most universal effects. Important elements include: treatment summary, information on nutrition/exercise, expected side effects, signs/symptoms of recurrence, follow-up schedule, and updates on changes to recommended care. Preferred format for SCP is similar for all groups. Women preferred oncology nurses to provide SCP at the beginning of the treatment and preferred written materials in lay language, telephone follow-up resource person and electronic bulletins for information post-treatment.
Conclusions: BCS are diversely impacted by the cancer experience. Effects vary by life stage, which impacts preferred content of SCP, but not format. Qualitative information on the impact of breast cancer at different life stages can be used to help customize content of SCPs.

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SURVIVAL PREDICTION IN TERMINALLY ILL CANCER PATIENTS: LABORATORY VARIABLES AND PROSPECTIVE VALIDATION OF PALLIATIVE PROGNOSTIC INDEX

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Background: Palliative prognostic index (PPI) was designed to predict a life expectancy based on clinical symptoms. This study was conducted to examine the relationship between PPI for a life expectancy and laboratory test results in patients with severe clinical symptoms who were admitted to the hospice ward and to evaluate the efficacy of PPI.
Methods: This study included a total of 239 patients. They were followed up to the time of death. PPI scores were divided into 1 of the following 3 categories: 4 (group 1); >4 and ≤6 (group 2); and >6 (group 3). At admission, laboratory variables were measured.
Results: The overall survival duration was 50 days in group 1, 24 days in group 2 and 14 days in groups 3. In group 3, the 3-week survival rate showed a sensitivity of 81.6%, a specificity of 66.7%. The important factors significantly affecting the 3-week survival rate were a PPI score of >6 (OR, 5.2) and an increase in the serum bilirubin level (OR, 2.0). The 3-week survival rate was more accurately predicted by using a combination of a PPI score of >6 and an increase in the serum bilirubin level (AUC, 0.77) than by using a PPI score of >6 alone (AUC, 0.7) ($p<0.001$).
Conclusions: The results of this study suggest that PPI can be easily and quickly applied to determine survival in patients admitted to the hospice hospital with accurate prediction of survival, especially in combination with hematologic test results, including serum bilirubin.

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THE FEASIBILITY AND ACCEPTABILITY OF COMPUTERIZED CANCER SYMPTOM ASSESSMENT IN HONG KONG

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Purpose: This study aimed to assess the feasibility and acceptability of using an electronic self report symptom assessment tool (ESRA-C) among Chinese oncology patients.
Methods and sample: The tool, the Electronic Self Report Assessment—Cancer (ESRA-C) developed by The University of Washington, Distributed Health Assessment and Intervention Research (DHAIR) group was translated into Chinese. The adapted web-based survey platform ESRA-C was tested through a touch screen computer system in a cancer resource centre in Hong Kong. Participants' perceptions of the acceptability and feasibility of the symptom assessment process were assessed using a mixed method consisting of the Acceptability E-scale as well as observation and qualitative interview data. A convenience sample of 30 (11 male and 19 female) oncology patients undergoing active treatments was recruited to use the touch-screen computer to assess cancer symptoms using ESRA-C.
Results: The acceptability scale indicated moderately high acceptability in each subscale (mean score of 3.32–4.71 out of 5). On average, participants took 17.5 minutes (SD: 8.9) to complete the ESRA-C. The qualitative interview data revealed that majority (25 participants) preferred the use of ESRA-C, as it was found to be useful and effective in reporting personal health conditions. Suggested modifications of the tool were made to suit the local cultural and health care context
Conclusions: The study suggested that ESRA-C offers a feasible, attractive, and viable means of implementing regular and comprehensive symptom assessment, which can lead to better symptom management in cancer patients.

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INTER AND INTRAINDIVIDUAL VARIABILITY OF BREAKTHROUGH CANCER PAIN INTENSITY: A PROSPECTIVE EVALUATION FROM THE ADEPI SURVEY

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Background: Breakthrough cancer pain (BTcP) is frequent in cancer patients (75%) and is still underrecognized and undertreated. Succesful management of BTcP depends on a combination of factors, including Pain Intensity variability assessment and evaluation.
Methods: During a prospective, national, multicenter survey conducted from march to september 2010 in 11 centers treating painful cancer patients, practitioners evaluated during 1 week all patients with severe cancer pain requiring opioids, using patient and observer-rated measures.
Results: 76 patients were included, 35 of them filled in the Patient Self-Report, 473 BTcP episodes were evaluated. The mean number of episodes per patient was 13.5±7.9.

Mean (SD). Intensity of BTcP episodes was 7.5±1.7 according to the practitionner evaluation (numeric scale 0 to 10) and 5.1±2.1 cm according to the patient evaluation (VAS). Only 39.5% of patients treated BTcP with transmucosal fentanyl. Other BTcP treatments were oxycodone (28.9%) and morphine (30.3%). Adequate and quick pain relief was achieved for 54.8%. 87 (18.9%) episodes were spontaneous (not related to an identifiable precipant), 62.6% were volitional and 1.7% non volitional. The mean amplitude of intensity variation intrapatient was 2.94± 1.84 cm.

Conclusion: Even if recorded in a small number of patients, this survey confirms the interindividual variability of BTcP assessment, and is the first one to give figures about the intraindividual variability of BTcP within patients. Thus, the succesful management of breakthrough cancer pain depends on a combination of targeted treatments/appropriate assessment including use of specific pharmacological treatments and frequent pain intensity evaluation.

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UPDATE ON THE SYSTEMATIC REVIEW IN PALLIATIVE RADIOTHERAPY TRIALS FOR BONE METASTASES

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Purpose: The purpose of this review was to update previous meta-analyses of randomized palliative radiotherapy (RT) trials comparing single fraction (SF) versus multiple fractions (MF).

Methods: All published randomized controlled trials (RCTs) comparing SF versus MF schedules for the palliation of uncomplicated bone metastases were included in this analysis. Odds ratios and 95% CI's were calculated for each trial. Forest plots were created using a random effects model and the Mantel-Haenszel statistic.

Results: A total of 21 RCTs were identified. For intention-to-treat patients, overall response rate was similar in patients receiving SF (1,696 of 2,818; 60%) and MF (1,711 of 2,799; 61%). Complete response (CR) rates were 620 of 2,641 (23%) in the SF arm and 634 of 2,622 (24%) in the MF arm. No significant difference was seen in overall or complete response rates. Pathological fracture and spinal cord compression trended towards favoring MF; however, neither were statistically significant (P=0.72 and P=0.13, respectively). Retreatment rates favored patients in the MF arm, where the likelihood of requiring re-irradiation was 2.6-fold greater in the SF arm (95% CI: 1.92 to 3.47; P<0.00001). Repeated analyses excluding drop-out patients did not alter these findings. In general, no significant differences in acute toxicities were seen.

Conclusion: Overall and complete response rates were similar in both intention-to-treat and assessable patients. SF and MF regimens provided equal pain relief; however, significantly higher re-treatment rates occurred in those receiving SF.

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MULTI-DAY PALONOSETRON, APREPITANT, LOW DOSE DEXAMETHASONE IN PREVENTION OF NAUSEA/EMESIS AMONG PATIENTS WITH MYELOMA/LYMPHOMA UNDERGOING AUTOLOGOUS STEM CELL TRANSPLANT(ASCT)

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Objectives: To assess emetic responses to multi-day palonosetron, aprepitant and low dose dexamethasone among patients with MM/lymphoma undergoing ASCT.

Methods: MASCC Antiemetic Tool (MAT) and "modified" Osoba module used to assess emetic responses and QOL, respectively. Conditioning regimens: MEL140-200 for MM and BEAM +/− rituximab for lymphoma. Standard aprepitant 125/80/80 mg administered PO. Dexamethasone 4 mg and multi-day palonosetron 0.25 mg IV were administered on days -3, -2, -1 for MM and days -7 thru -3 for lymphoma. Palonosetron repeated day + 3 in both groups.

Results: 20 patients enrolled, 18 analyzed: 11 males, 7 females, median age 55 (range:35–66). Overall emetic responses achieved in 89% of patients. All patients achieved some form of emetic control in the acute and delayed phases; 11% of patients failed in the extended phase of chemotherapy. Sixty-one (61%) of patients had no significant nausea with the median NVS of 4.5. Nausea and emesis peaked on day + 3 (five days post chemotherapy). QOL correlated with both emetic and nausea control. Eight patients developed grade 2–3 non-hematologic toxicities attributed to the preparative transplant regimen.

Conclusions: Multi-day palonestron combined with aprepitant and low dose dexamethasone achieved 89% emetic control among MM/lymphoma patients undergoing ASCT and appeared safe in this setting. All patients achieved

emetic control in the acute and delayed phases of chemotherapy. Emetic failure and nausea in the extended phase impacted on the QOL of these patients. These encouraging results warrant further evaluation in a larger ASCT patient population.

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RTOG 1016 DENTAL EFFECTS HEALTH SCALE AND DENTAL COUNT TOOLS FOR CLINICAL TRIALS: DEVELOPMENT AND OPPORTUNITIES FOR VALIDATION AND UTILIZATION

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Short tools for assessing dental health status in oncology clinical trails are lacking. We created new dental assessment tools using CTCAE style language for RTOG 1016, a randomized phase III trial (N=700 patients) comparing radiotherapy (RT) plus concurrent high dose cisplatin to RT plus weekly cetuximab in patients with human-papillomavirus (HPV) related oral cancer. The primary objective of the trial is to reduce acute and late morbidity without compromising survival. Collection of late toxicities will include CTCAE v. 4, multiple measures of swallowing function, and QOL using EORTC tools. The CTCAE system carries only limited terms for dental effects (tooth pain, periodontal disease, caries, tooth development disorder), collectively inadequate for following dental and oral health concerns, and difficult to aggregate into a coherent summary.

We created the RTOG Dental Effects Health Scale (DHS) and Dental Count (DC) tool for longitudinal trial assessments. Data will be collected at baseline and 12, 24, 60, and 120 months. The total number and position of teeth will be collected (DC). The elements of the DHS scale were derived from descriptors included in the MD Anderson H&N pre-radiation assessment for dental management and extractions (1966). The tools and research plan have been approved by NCI for use in RTOG 1016. We will describe the need, background, and construction of the tools, as well as opportunities for validation of their clinical utility and interpretation. After a period of use, the tools will be submitted to the NCI CACTE Governance Committee for consideration in future CTCAE versions.

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HEMATOLOGIC COMPLICATIONS AND HIGH COSTS ASSOCIATED WITH PATIENTS WITH MYELODYSPLASTIC SYNDROME IN A COMMERCIALLY INSURED POPULATION

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Objectives: To estimate the frequency and cost of hematologic complications associated with myelodysplastic syndrome (MDS) in a U.S. commercially insured population.

Methods: The study included patients who had an initial MDS claim (ICD-9-CM 238.72–283.75) between 2/1/2007 and 7/31/2008, and were continuously enrolled for 6 months before and 12 months after the index claim. Baseline demographic variables were defined using preindex claims. Utilization and cost variables were calculated using postindex claims.

Results: There were 3,327 patients with MDS identified, of these 1,209 were both newly diagnosed and continuously enrolled. All major regions of the country were represented. In the year after diagnosis, 65.5% (n=792) and 24.1% (n=291) were diagnosed with anemia and thrombocytopenia, respectively. Interventions included erythropoietin use (27.8%, n=336) and transfusions (16.5%, n=199). Despite NCCN guidelines, only 49.5% (n=598) received a bone marrow biopsy and 6.3% (n=76) patients were treated with either a hypomethylating agent (HMA) or thalidomide analogue (TA). Mean total healthcare charges were $100,809 (SD $188,311, median $40,975).

Conclusions: MDS is frequently associated with hematologic complications including anemia and thrombocytopenia, and erythropoietin and blood transfusions are commonly used to treat these complications. Few patients receive a bone marrow biopsy or are treated with HMA or TA in the year after MDS diagnosis despite NCCN guidelines and studies demonstrating improved clinical and economic outcomes with HMA treatment compared to supportive care. Future studies are warranted to determine if appropriate guideline based interventions MDS will help reduce hematologic complications, subsequent interventions, and costs associated with this condition.

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INTEGRATED ANALYSIS OF 3 TRIALS OF DENOSUMAB VERSUS ZOLEDRONIC ACID ON PAIN IN PATIENTS WITH ADVANCED CANCER AND BONE METASTASES

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Objectives: Patients with bone metastases from advanced cancer are at high risk for skeletal-related events (SREs) and their associated impact. Zoledronic acid (ZA) has been proven to prevent SREs and may relieve pain. An integrated analysis of 3 identically designed phase 3 trials found that denosumab, a fully human monoclonal anti-RANKL antibody, was superior to ZA in preventing or delaying time to first SRE across a variety of tumour types. Patient-reported pain outcomes are discussed.
Methods: Eligible patients with breast, prostate or other cancer or myeloma received SC denosumab 120 mg or IV ZA 4 mg in a double-blind design (N=5723). Patients completed the Brief Pain Inventory (range 0–10; no pain-worst pain imaginable) to assess pain severity at baseline, day 8 and monthly until study end.
Results: Denosumab prolonged time to moderate/severe pain compared with ZA among patients with no/mild pain at baseline (198 days versus 143 days; HR 0.83, 95% CI 0.76–0.92, P=0.0002). At all timepoints, the proportion of patients who reported moderate/severe pain on study was consistently lower for denosumab than ZA among pts with no/mild pain at baseline. In the overall population, a lower proportion of patients in the denosumab arm shifted from low analgesic use to strong opioid use compared with ZA. Time to pain improvement was similar between the two treatment arms (86 days versus 85 days, respectively; HR 0.99; 95% CI 0.92–1.07; P=0.844).
Conclusions: Denosumab delayed pain progression and the escalation of analgesic use versus ZA.

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PROFESSIONAL NAVIGATION, SCREENING FOR DISTRESS AND ACCESS TO CANCER SUPPORTIVE CARE IN CANADA

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Introduction: Screening for distress is suggested as a first step to optimize response to cancer patients' needs. This change of practice could have positive impacts on coordination of care, which is a key function of professional cancer navigators.
Objective: The objective of this study was to describe the perceptions of implementing screening for distress with professional navigators from the perspective of key actors in Quebec and Nova Scotia.
Methods: Descriptive pre/post implementation study. A total of 39 volunteers were interviewed (professional navigators, psychosocial and spiritual oncology staff, health administrators; interviews: n=6; focus groups: n=6). Analyses were conducted with an adapted framework based on the theory of emergent action (Patton, 1997) and a bi-dimensional definition of professional navigation (Fillion et al., 2011).
Results: Perceptions of the professional navigator's role in screening for distress were analysed according to the bi-dimensional definition selected. The first dimension refers to continuity of care and the second, to patient and family empowerment. For each dimension, perceived functions associated to screening for distress were illustrated with verbatim. Similar advantages and challenges were highlighted within both sites. Screening for distress was perceived as an important change of practice, improving oncology team functioning and patient-centered care.
Conclusions: Highlighting how screening for distress is embedded in the professional navigator's role and how it facilitate their role of improving access to supportive care for cancer patients (targeted interventions, efficient referrals), this study supports the relevance of implementing screening for distress with professional navigators.

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IS MDR-1C3435 POLYMORPHISM RESPONSIBLE FOR MORE ORAL MUCOSITIS IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA?

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The human MDR-1 gene encodes P-glycoprotein, which transports a broad range of anticancer drugs. Although the functional consequences of MDR-1 polymorphisms have been the subject of numerous studies, best to our knowledge, non have assessed the association with clinical side effects of the anticancer drugs. Our aim is to reveal the role of polymorphism C3435T of MDR-1 gene in oral mucositis formation in children with acute lymphoblastic leukemia(ALL). The distribution of MDR-1 C3435T polymorphism in 47 patients (13 girls and 34 boys) with ALL was determined by polymerase chain reaction based restriction fragment length polymorphism (RFLP) and compared with that of 68 healthy controls (25 girls and 43 boys).The mean age of patients and controls were 8,68 and 10,14 respectively. There were no statistically significant differences in distribution of genotypes of MDR-1 gene in patient and control groups. Oral mucositis were detected %78,7 (n=37) of the patients and %31,9 (n=15) were severe type. Oral mucositis were found to be associated with MDR-1 CT genotype (p=0,031) and also associated with T allele carriage but not statistically significant.

These preliminary data suggest that children carrying the CT genotype are more prone to develop oral mucositis and might mean being more susceptible to the side effects of chemotherapy. Since limited number of patients were investigated, future studies are needed to confirm these findings.

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MENTAL HEALTH CORRELATES OF HEAD AND NECK CANCER IN INDIA: A QUALITATIVE ANALYSIS

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Objective: The paper aims to qualitatively understand the mental health correlates and coping strategies of post surgery head and neck cancer patients in India.

Methods: 80 new cases of post surgery cancer patients between the age group of 30–60 years, diagnosed with squamous cell carcinomas of the head and neck region (3rd or 4th stage of cancer) with a minimum two months of symptomatic phase pre-surgery were recruited from the wards of the Tata Memorial Hospital (Mumbai, India) for the study. Semi-structured in-depth interviews on the patient's mental health correlates related to cancer and the coping strategies employed were conducted over a single session of one-two hours.

Results: Content analysis of the qualitative data collected from the in-depth interviews showed that the immediate feelings experienced by the patients after their diagnosis was fear, anxiety, and sadness. Post disclosure of diagnosis, a significant number of the patients were in denial and some others blamed their fate for their present condition. Spiritual methods of coping (prayer and meditation, adopting a positive attitude) were the most frequently used mainstream coping strategy, apart from other traditional methods (taking medications, indulging in exercise and activities to divert one's attention).

Conclusion: Mental health correlates and the coping strategies used by patients suffering from cancer in the India are unique to its culture. An in-depth understanding of the mental health correlates, coping strategies, spiritual and cultural orientation of the patients is essential to develop effective intervention programmes to minimize the psychological impact of cancer.

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ANXIETY AND DEPRESSION IN PRE-AND-POST-HEMATOPOIETIC STEM CELL TRANSPLANTS IN SCT CENTER: SHARIATI HOSPITAL; TEHRAN-IRAN

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Background: In Iran along with other countries, as progresses and advances in transplant technology are increasing, the number of patients undergoing transplantation is rising steadily. In order to make Stem-Cell Transplantation (SCT) safer and more effective, psychological distress of patients must be taken in to account. Patients are facing challenges pre- and post-transplantation. This study attempts to measure and compare the levels of anxiety and depression before and after SCT.

Method: The study includes 35 patients (21 male and 14 female; mean age 34.8 range 18-60 years; 10 Hodgkin's disease, 10 MM, 9 AML and 6 ALL) who met the inclusion criteria at the time of hospitalization were selected as candidates for SCT at Shariati Hospital-Tehran, Iran. Anxiety and depression were evaluated by Hospital Anxiety and Depression Scale (HADS). Questionnaires were filled out in two steps, one within 48 hours after hospitalization and the other one on the day of discharge.

Results: Level of anxiety and depression decreased from 8.64±3.42 to 6.09±2.84 and from 7.20±3.49 to 6.00±3.7, respectively (both p-values <0.001). Nobody has severe anxiety/depression pre- or post-SCT and only one patient had moderate anxiety/depression before SCT that reduced to mild level thereafter.

Conclusion: The level of anxiety and depression in transplant patients has been reduced. The findings suggest that psychological distress (anxiety, depression) should be evaluated in patients at frequent intervals. Therapeutic treatment procedure, pharmaceutical and non pharmaceutical treatment should be carried out based on the results obtained from patients under study.

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PHYSICAL AND MENTAL HEALTH STATUS AND HEALTH BEHAVIORS IN MALE BREAST CANCER SURVIVORS: A NATIONAL POPULATION-BASED CASE CONTROL STUDY

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Objective: Identify current psychosocial status and health behaviors of male BC survivors.
Method: Using data from the 2009 population-based, USA Behavioral Risk Factor Surveillance System (BRFSS) survey, 66 male BC survivors (BC group) were identified (mean: 64.5 yrs, 12.0 yrs post-diagnosis). Each male BC survivor was matched (age, education, minority status) with 3 healthy male controls (HC group; n=198) randomly selected from BRFSS respondents.
Results: Regarding current physical and mental health status, t-tests indicated the male BC group reported poorer life satisfaction (Effect size (ES)=0.41 standard deviation (SD); $p<.05$) and general health (ES=0.40 SD, $p<.01$) and more days when physical (ES=0.29 SD; $p<.05$) and mental health (ES=0.49 SD; $p<.001$) was not good. Logistic regression indicated the BC group was more likely to report activity limitations due to health problems (Odds Ratio (OR)=3.2; $p<.001$). Regarding current health behaviors, logistic regression indicated no differences between the BC and HC groups in rates of use of alcohol, cigarettes or smokeless tobacco or rates of engagement in moderate or vigorous physical activity, or obesity (p's>.05). Chi-square analyses indicated no difference in time since last routine check-up or daily servings of fruits/vegetables consumed (p's>.05).
Conclusion: While current health behaviors of male BC survivors are similar to those of healthy controls, male BC survivors report markedly poorer physical and mental health status. The challenge is to further specify the nature and origin of these deficits and develop and disseminate gender-appropriate interventions to this dispersed and underserved group of cancer survivors.

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ROLE OF UPFRONT HDR BRACHYTHERAPY IN DYSPHAGIA PALLIATION IN ESOPHAGEAL MALIGNANCIES

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Objectives: In developing countries, patients with esophageal cancers present late in the course of the disease when dysphagia for liquids (grade ≥3) set in. Most patients are inoperable due to the poor performance status and advanced tumor stage. The treatment for such patients would include definitive chemoradiation therapy followed by intraluminal brachytherapy. Initial management included insertion of Ryle's tube or feeding gastrostomy or PEG tube insertion which is difficult in maintenance throughout the treatment period. These procedures add to additional costs to the family. We used upfront High Dose rate (HDR) brachytherapy for relieving dysphagia followed by external radiotherapy (EBRT). EBRT was started 1 week after brachytherapy
Methods: 10 patients with grade ≥3 dysphagia were treated with upfront HDR brachytherapy followed by EBRT. We assessed dysphagia palliation, food intake, maintenance of weight, weight gain during treatment and compliance with chemotherapy with patients on conventional arm.

Results:

S. No	Parameters	Trial arm	Conventional arm
1	Grade of Dysphagia	Start of Brachytherapy—Grade > or equal 3, Start of EBRT—Grade < or equal 1, 2 weeks after EBRT—Grade 0	Start of EBRT—Grade > or equal 3, 2 weeks after EBRT—Grade > or equal 2, Start of Brachytherapy—Grade > or equal 1
2	Dysphagia Palliation	Complete palliation achieved during 2nd week of EBRT	Complete palliation not achieved during EBRT
3	Maintenance of weight	No loss of weight in all patients.	Weight loss present in all patients. Maximum 8 kg
4	Food intake	Increased in all patients. Mild decrease in patients by 4th week of EBRT due to Mucositis	Less in all patients due to tumor and Mucositis. Decreased very much in all patients by 4th week
5	Weight gain	4 patients gained maximum of 4 kg	No patient had weight gain
6	Compliance with chemotherapy	All patients completed 3 cycles of chemotherapy - Day 1, 22, 43	4 patients completed 3 cycles of chemotherapy. 5 patients completed 2 cycles. 1 patients refused cycle 2 due to excessive nausea and vomiting
7	Chemotherapy dose reduction and reduction in number of cycles	Nil	Yes

[Results]

Conclusion: Upfront brachytherapy yields better palliation and treatment compliance in esophageal cancers.

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HAND FOOT SYNDROME IN PATIENTS RECEIVING SORAFENIB: THE DEVELOPMENT AND VALIDATION OF A RISK PREDICTION TOOL

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Background: Sorafenib is an active drug in patients with advanced renal cell and hepatocellular carcinoma. However, hand foot syndrome (HFS) is a frequent adverse event (AE) (all grade: 60%, grade ≥2: 23%). In this study, the development and validation of a repeated measures model to predict the risk of ≥grade 2 HFS by week of therapy is described.
Methods: Data from 451 patients who received sorafenib as part of a clinical trial were reviewed [Escudier, 2007]. Generalized estimating equations were used to develop the risk model. External validation was then performed on a new sample of 1145 patients who received sorafenib under an expanded access program. A risk scoring algorithm (range 0–60) was then derived from the final model coefficients. A receiver operating characteristic curve (ROC) analysis was also undertaken to measure the predictive accuracy of the scoring system.
Results: Pretreatment white cell count, female gender, good performance status, presence of lung and liver metastases and the total number of metastatic sites were identified as being important predictors for ≥grade 2 HFS. A non linear association between HFS risk and duration of therapy was also identified where risk was maximized at week five. The ROC analysis on the internal and external validation datasets had acceptable areas under the curve of 0.67 (95%CI: 0.64 - 0.70) and 0.60 (95%CI: 0.59-0.62) respectively.
Conclusions: The application and planned continued refinement of this prediction tool will be an important source of patient-specific risk information for the development of moderate to severe HFS.

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EVALUATION OF THE RELATIONSHIP BETWEEN LEVEL OF NURSING CARE SATISFACTION AND SYMPTOM EXPERIENCE DUE TO CHEMOTHERAPY IN CANCER PATIENTS

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The aim of the study was to define relationship between the patient satisfaction with nursing care and their symptom experience in cancer patients receiving chemotherapy.This study was planned as a descriptive and cross-sectional study performed at the Gülhane Military Medical Academy(GMMA) with 60 cancer patients. Patient Data Form, the "Chemotherapy Symptom Assessment Scale (C-SAS)" and "Patient Satisfaction Scale" were used in order to collect the data.The criteria to be included in the study were:
(a) diagnosis of cancer;
(b) age 18 or older;
(c) ability to read and write Turkish;
(d) willingness to participate;
(e) mentally able to communicate;
(f) cycle of chemotherapy least two or more.
The total mean score of satisfaction scale was 4.37±0.81. This score showed that high patient satisfaction. It is a positive result for nursing care.There were no significant difference between patient socio-demographic variables and satisfaction mean score ($p>0.05$). The first three symptoms for patient were lack of appetite (n=50, 83.3%), debility (n=49, 81. 7%) and nausea (n=41, 68.3%). There were no relationship between patient symptom severity and satisfaction mean score ($r= -0.094$, $p=0.474$).In Gruenigen et al. study it is showed that there was no correlation between quality of care and satisfaction score and symptom severity. There were a no relationship between patient satisfaction and disturbing degree of symptoms scores ($r=-0.101$, $p=0.443$).According to the patient scoring, the most satisfaction items were related "nurse" communication during the chemotherapy treatment" and the least satisfaction items were related "patient and their family education about after chemotherapy treatment".

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HOW CAN A GUIDELINE IMPROVE THE NEEDS OF PATIENTS AND THEIR FAMILIES IN THE MANAGEMENT OF PEDIATRIC CANCER PAIN?

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Objective: The purpose of this study was to investigate the experiences in pediatric cancer pain management by patients and families to inform the creation of a

pediatric cancer pain management guideline to be used by practitioners in more effectively addressing patient needs.

Methods: Twenty four pediatric cancer patients in therapy and their families completed questionnaires investigating their experiences with cancer pain management. Resulting data were entered into qualitative data management software and analyzed using the constant comparative technique from Grounded Theory.

Results: It is clear from the findings that patients need to be educated about, and more involved in pain management. This includes incorporating non-pharmacologic approaches to pain. The findings indicate that patients and their caregivers would benefit from understanding their care. Participants stated that they want open dialogue with healthcare providers around pain and pain management, indicating that communication is integral to the screening and assessment of pain. The study suggests that consistent information on available treatments and expected efficacy could help empower patients and their caregivers to be more active in their pain management.

Conclusion: A pediatric cancer pain management guideline can be an effective tool to allow healthcare professionals to understand and incorporate the needs of children and families in the management of their cancer pain. A guideline should include the importance of communication between the patient/parent and the healthcare team. Specifically, there should be sections on what to expect from the healthcare team, what questions can and should be posed, and available pain management alternatives.

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QUALITY OF LIFE OF PATIENTS UNDERGOING SURGICAL TREATMENT FOR NEWLY-DIAGNOSED, CLINICALLY LOCALIZED RENAL CELL CARCINOMA

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Background: Quality of life issues in pre-nephrectomy patients have not been adequately studied.

Aims: This investigation evaluated the psychological needs of individuals undergoing nephrectomy to treat newly diagnosed, localized renal cell carcinoma (RCC).

Methods: We screened presurgery patients and consented those willing to participate. A mixed qualitative-quantitative approach was employed. The qualitative component consisted of conducting individual semi-structured interviews ≥4 weeks pre and post-nephrectomy. The quantitative component included administration of standardized measures assessing anxiety, depressive symptoms, psychological distress, and both general and disease specific quality of life (QOL) prior to nephrectomy and at 4, 12, and 24 weeks post-nephrectomy.

Results: 28 patients consented to participate in the study. The interviews revealed participants experience anxiety, fatigue, and restricted ability to engage in physical activity in the short-term following nephrectomy. Responses from the quantitative instruments at baseline indicated that individuals experience significantly greater adverse mood ($p<0.001$) and a trend toward experiencing a greater level of depressive symptoms ($p=0.08$). However, participants reported similar, or in some cases even significantly better functioning, than the normative samples to which they were compared on measures of health-related QOL (Functional Assessment of Cancer Therapy-General), general (non-disease specific) QOL (Medical Outcomes Study 36-item short form survey), and state anxiety (State-Trait Anxiety Inventory).

Conclusion: The analysis did not reveal any significant pattern of changes over time for any of the measures, indicating that functioning was stable from pre- to post-treatment.

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MALIGNANT ASCITES IN CLINICAL PRACTICE: ITALIAN SURVEY

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Objectives: Malignant ascites is a pathological condition in which fluid containing cancer cells, collects in the abdomen. Cancer is the second etiological cause after cirrhosis, and accounts for 10% of all cases of ascites The cancers which cause most frequently are ovarian (37%), pancreo-biliary (21%), gastric (18%), oesophageal (4%), colorectal (4%), followed by breast cancer (3%).

Methods: An on-line "Italian Medical Oncology Association" (AIOM) survey was carried out in 2009 and results were compared and statistically analized to results obtained in a questionnaire compiled by oncologists at the 2010 AIOM congress.

Results: 703 oncologists took part in the on-line survey and 303 compiled the questionnaire at the AIOM congress. The results were analysed:

Questions	AIOM survey 2009	Questionnaire 2010
Tumour diagnosis	Ovarian 35% Gastric 27%	Ovarian 37% Gastric 17%
ECOG PS	<2 50%>2 50%	<2 46%>2 54%
Life expectancy	<2 mo 43% 2–3 mo 24%	<2 mo 26% 2–3 mo 26%
Frequence of paracentesis	<15 days 47%>15 days 24%	<15 days 30%>15 days 24%
Impact on clinical practice	Relevant 48%	Relevant 76%
What you would like to obtain from a new drug	I Increase of survival II—Reduction of the number of paracentesis	I—Increase of survival II—Improving of QoL III—reduction of hospitalisation

[Italian Survey on ascites]

Conclusions: There is a growing interest of clinicians concerning Malignant Ascite, as demonstrated by the great adherence to the AIOM on line survey and the questionnaire. The clinical practice treatment of malignant ascites reflects the actual state of art (mainly palliative) The approach to malignant ascites remains a challenge and there is the necessity for innovative strategies in order to increase survival, improve QoL and reduce hospitalisation.

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HOW CAN A GUIDELINE BETTER ASSIST HEALTHCARE PROFESSIONALS IN PEDIATRIC CANCER PAIN MANAGEMENT?

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Objective: The objectives of this study were to investigate the use of pain therapy guidelines by practitioners who care for pediatric cancer patients and to explore how gaps and barriers to treatment could be reduced through the use of a guideline.
Methods: Nineteen healthcare professionals involved in the treatment of pediatric cancer pain in Nova Scotia, Canada completed questionnaires exploring the roles of pain therapy guidelines in their practice. Participants included child life specialists, physiotherapists, nurses, general practitioners, pediatricians, palliative care specialists and pediatric hematologists/oncologists. Data were entered into a qualitative analysis software and then analyzed using the constant comparative technique.
Results: Participants indicated that guidelines would enhance communication between them and their patients and patients' parents. There would be benefit to including information in guidelines that could assist in understanding of the needs of the patient. A pediatric cancer pain management guideline should be created that includes all methods of managing pain with the advantages and disadvantages of each. It was also expressed that a short version of the guideline, including algorithms, summary tables and questions to ask patients and their parents about pain, would be beneficial.
Conclusion: A guideline can clearly help practitioners achieve better pain care as a consistent and flexible guide to screening, assessing and managing pain.

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DAY HOSPITAL: SUPPORTIVE CARE OF CHILDREN WITH CANCER IN A SINGLE INSTITUTION IN ARGENTINA

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Introduction: Children with cancer have now better survival rates thanks to the adequate chemotherapy treatments and by the improvement of supportive care. Increase in treatment intensity requires a clinical support facility with increasing complexity.
Objective: To describe purposes and benefits of a Day Hospital for cancer patients.
Methods: We describe activities and organization of a Day Hospital for children with cancer in a third level hospital.
Results: One third of children with cancer in Argentina are assisted in our institution, which includes about 400 new patients per year. We receive patients referred from different provinces for diagnosis and treatment. The Day Hospital is actively involved in patients care. The task is developed in close collaboration between general pediatricians and hemato -oncologists. We receive between 17000 and 20000 admissions per year. We treat ambulatory infections,

nutritional aspects and side effects of chemotherapy. Patients are monitored ambulatory until resolution of their problems and on the basis of their general condition we decide the hospitalization. Almost 90% of patients admitted are treated without requiring transfer to inpatient care. In our facility, patients receive parenteral chemotherapy (between 3500 and 5000 per year) and procedures (bone marrow punctures, fine needle biopsy) 1200 per year.This set up benefits patients in terms of quality of life. Hospitalizations are associated with increased morbidity and carry high psycho-social and economic costs for both the family and the hospital.

Conclusion: We underline advantages of a day hospital for children with cancer including a close interaction between pediatricians and hemato-oncologists.

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CHEMOTHERAPY-INDUCED DIARRHOEA IS ASSOCIATED WITH A MODIFIED INTESTINAL MICROBIOME AND INTESTINAL INFLAMMATION

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Introduction: Diarrhoea is a major clinical manifestation of alimentary mucositis. The underlying pathology of oral and small intestinal mucositis has been well studied, although the mechanisms contributing to chemotherapy-induced diarrhoea (CID) are poorly understood. The aims of this study were to determine if the faecal microbes and faecal calprotectin levels of patients with CID were displaced from that of healthy controls.

Methods: Sixteen patients (6 males and 10 females) with a median age of 71 years (range 36–82) receiving chemotherapy provided informed consent. This was a non-invasive study, with patients requested to provide stool samples and blood samples, taken after the onset of CID. Stool samples were analysed using quantitative real time PCR. ELISA kits were used to determine faecal calprotectin levels.

Results: The majority of patients experiencing CID showed decreases in levels of Clostridium spp., Lactobacillus spp., Bifidobacterium spp., Bacteroides spp. and Enterococcus spp.. Increases were observed in levels of E. coli and Staphylococcus spp.. Antibiotics did not have any noticeable effect. Methanogenic archaea were also quantified, with all patients except one showing a decrease. Faecal calprotectin levels were increased in 81% of patients with CID.

Conclusions: In conclusion, CID is associated with marked changes in the intestinal microbes and intestinal inflammation. This may be the result of an altered luminal environment. The changes may result in diminished microbial functions within the gut, altering gut function and initiating intestinal damage, resulting in the onset of diarrhoea.

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FACTORS ASSOCIATED WITH RESPONSE TO SPECIALIST BASED OUTPATIENT PALLIATIVE CARE IN ADVANCED CANCER PATIENTS WITH SLEEP DISTURBANCE

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Background: Sleep disturbance (SD) is one of the most distressing symptom in patients with advanced cancer. There is limited data on the effectiveness of treatment and predictors of response.

Methods: We reviewed 442 consecutive patients with advanced cancer presenting in the Supportive care clinic for SD. All patients underwent screening for SD ('+' defined as ≥3/10) and interdisciplinary assessment and treatment including drug review, counseling, sleep hygiene, and drug therapy (PC). Response was defined as ≥30% improvement from initial to follow-up visit). Baseline characteristics, symptom distress (ESAS), Use of opioids, steroids, anxiolytics, and CAGE, were analyzed to determine their association with response to PC.

Results: The median age—58 years; males were 53%. The most common cancer types were H&N, Lung (36%). 330/442 pts had SD (75%). Median, mean (SDev) for SD (0=best sleep, 10- worst sleep imaginable) were 5 and 5(3). Sedative use (r-0.16, $p=0.002$), pain (r - 0.31), fatigue (r-0.31, <0.001), Depression(r-0.25, $p<0.001$), anxiety (r-0.28, $p<0.001$), drowsiness (r-0.30, $p<0.001$) and feeling of wellbeing (r-0.33, $p=0.02$) are associated with SD at initial consult. SD response was seen in 143/330 (43%). Use of medications such as anxiolytics/hypnotics, steroids, opioid dose or pain, depression, anxiety, fatigue and delirium were not predictive of SD

response. Higher SD score (OR=1.14 per pt; p=0.01) was associated with response in patients with moderate to high baseline SD.

Conclusions: Frequency and severity of SD is high. Response to interdisciplinary supportive care is low. Further research is warranted.

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DEVELOPMENT OF Γ-D-GLUTAMYL-L-TRYPTOPHAN (SCV-07) FOR THE TREATMENT OF ORAL MUCOSITIS (OM)

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Objectives: OM results from a cascade of biological events. Th1 cytokines increase following ionizing radiation, but the Th1:Th2 population ratio is skewed in the opposite direction. Since the Th1/Th2 imbalance may disrupt tissue homeostasis and increase toxicity risk, an interventional strategy using the synthetic immunomodulating peptide SCV-07 was initiated.

Methods: SCV-07 efficacy, dosing and scheduling parameters were assessed in hamster models of acute, fractionated and concomitant chemoradiation (CRT). Xenograft studies using human head and neck cancer (HNC) lines confirmed that SCV-07 did not impact CRT anti-tumor response. A multicenter, prospective, blinded, randomized trial evaluated SCV-07's ability to alter OM in CRT-treated HNC patients (n=57). Cytokine and gene microarray analyses were performed for samples obtained before and on the last radiation day.

Results: Subcutaneous SCV-07 at a dose of 0.1 mg/kg (n=17; HD), but not 0.02 mg/kg (n=19; LD), delayed severe OM vs. placebo (n=20)[18% vs. 32% at ≤40 Gy and 29% vs. 42% at 50 Gy] and the onset of ulcerative OM (UOM). Cox regression analysis of time to UOM initial occurrence demonstrated a 52% decrease in the HD SCV-07 cohort vs. placebo. HD SCV-07 resulted in fewer G-tubes placed, unplanned or emergent visits, and treatment breaks. Elevated macrophage-associated cytokines confirmed the activity in SCV-07-treated patients. Pro-inflammatory cytokine levels were reduced. Gene expression differences were noted between SCV-07 and placebo patients. A unique cluster of genes was identified that discriminated SCV-07 responders from non-responders.

Conclusions: SCV-07 may be an effective therapy to attenuate CRT induced OM in HNC patients.

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FREQUENCY AND FACTORS ASSOCIATED WITH FALLS IN PATIENTS WITH ADVANCED CANCER CONSULTED TO OUTPATIENT SUPPORTIVE CARE CLINIC

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Introduction: Despite its importance, there is limited research on frequency and factors associated with fall episodes in advanced cancer patients. The aim of this study was to determine the frequency and factors associated with fall episodes in advanced cancer patients.

Methods: Data including demographic characteristics, use of assisted devices, cancer diagnosis, metastatic site, performance status, medications including hypnotics and opioids, ESAS (Edmonton Symptom Assessment Scale), MDAS (Memorial Delirium Assessment Scale) in 384 consecutive patients who were newly referred to the Supportive Care Clinic at the MD Anderson cancer from 1/1/2009 to 12/31/2009 were analyzed. All patients completed standardized forms to report falls within one month. Multivariate backward regression analyses were used to identify factors that are predictive of falls in advanced cancer.

Results: The mean age of the patients was 58 years and 192 (50%) were male. Mean (SD)/Median score for Pain was 5 (2.8), 5; Fatigue 5.6 (2.6), 6; Sleep disturbance 5(2.7), 5; Drowsiness 3.7(3), 3; Anorexia 5(3), 5, respectively. 31 patients (8%) reported fall episodes within the past month. 17 (55%) of them reported use of assisted devices. Using assisted devices (OR=5.5, 95% CI: 2.6-11.9, p<.0001) and taking zolpidem (OR=3.39, 95% CI: 1.39-7.7, p=0.008) were associated with higher chance of falling. MDAS (4.00 vs. 1.42, p=0.001) was associated with falls. Severity of ESAS at the initial consult was not associated with falls.

Conclusion: We conclude that patients with assisted devices, taking zolpidem, and delirium are associated with higher risk of falls. Further studies are warranted.

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UNMANAGED PAIN: A NIGHTMARE FOR PATIENTS WITH ADVANCED CERVICAL CANCER

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Introduction: In sub-Saharan Africa, more than 50 percent of women with cervical cancer present at advanced stage on first contact. Also, in many regions, treatments such as radical hysterectomy, radiotherapy, or chemotherapy, if available, are not accessible or affordable. Palliative care, which aims at preventing and reliving suffering through impeccable assessment and treatment of pain and other problems, may be the only realistic option for them.

Objective: This paper describes agony faced by cervical cancer patients with pain admitted in a gynecology ward in a referral hospital in Western Kenya.

Methods: Self administered questionnaire addressing satisfaction with pain management was randomly administered to 20 patients admitted to the gynecology ward.

Results: 80% were getting morphine sulphate syrup intermittently: 50% got it prn, 25% got eight hourly while the remaining 25% were given this magic medicine twice a day. In the remaining 20% of patients, despite having pain, they did not express behavioral signs, thus they were not assessed for pain and never received pain treatment. The administration of laxatives was irregular; given when constipation was reported.

Conclusion: Administration of oral morphine sulphate by HCP's is not prompt since it is still being viewed as an addictive drug. To make excellent cancer care possible, there is need to train these HCP's in regular pain assessment and management according to the WHO ladder, including oral morphine sulphate, with a mentorship program put in place to ensure effective implementation.

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THE CO-ADMINISTRATION OF THE NK_1 RECEPTOR ANTAGONIST NETUPITANT WITH PALONOSETRON AND DEXAMETHASONE REDUCES CISPLATIN-INDUCED ACUTE AND DELAYED EMESIS IN FERRETS

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Objectives: The prevention of chemotherapy-induced acute and delayed emesis often involves the use of 5-HT_3 receptor antagonist with the NK_1 receptor antagonist plus Dexamethasone, however dosing frequency and success of treatment is not ideal. In the present studies, we investigate the antiemetic potential of a single administration of Palonosetron (PALO) and Netupitant(NETU), alone with Dexamethasone (DEX), and combined all together in the cisplatin-induced acute and delayed emesis model in the ferret.

Methods: Male ferrets were administered one dose of Palo 0.03-0.1 mg/kg and/or NETU 0.1-1 mg/kg orally before cisplatin 5 mg/kg, i.p.; DEX 1 mg/kg, i.p. was administered before cisplatin and then continued at 24 h intervals. Food intake and retching and/or vomiting were recorded for up to 72 h.

Results: In control animals, cisplatin induced 205.6±40.5 and 471.0±98.3 retches + vomits during the 0–24 (acute) and 24–72 h (delayed) periods, respectively. PALO and NETU alone with DEX, dose-dependently reduced acute emesis. Combination of all drugs enhanced the antiemetic activity. At the highest doses, the reduction of acute emesis by the combination was almost complete (99%) as well as delayed emesis. Cisplatin reduced food intake during the acute period by 82.1% in control animals. PALO with DEX, and in combination with NETU and DEX, significantly($p<0.05$) antagonized the cisplatin-induced reduction in feeding by 41 and 38%, respectively.

Conclusions: The single oral regimen PALO + NETU + DEX is highly effective in antagonizing cisplatin-induced acute and delayed emesis in the ferret. The antagonism of cisplatin-induced decreases of food intake might relate to an ability to reduce nausea.

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CLINICAL CHARACTERISTICS OF CANCER PATIENTS USING HIGH DOSE OPIOIDS

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Background: The purpose of this study was to investigate the clinical characteristics of cancer patients treated with high dose opioids for pain management.

Methods: We prospectively observed the use of high dose opioids and adjuvant drugs for pain management, severity of pain, parameters associated with quality of life, and adverse effects in cancer patients using high dose opioids (oral morphine equivalent dose 120 mg/day). Data from 486 cancer patients with pain and prescribed high dose

opioids were collected from 44 hospitals during the period from February 2009 to March 2010.

Results: One hundred and forty-eight patients were in the mild pain group (Numerical Rating Scale (NRS) 1~3), two hundred and sixty-eight patients were in the moderate pain group (NRS 4~6), and fifty-two patients were in the severe pain group (NRS 7~10). Compared with mild pain group, patients in the moderate and severe pain groups had impaired quality of life, which was measured by an index consisting of ambulation, daily activity and sleep. Total dose of opioids (oral morphine equivalent dose) during screening visit 1 was higher in the moderate and severe pain groups than mild pain group. NRS of all groups had improved after 4 weeks. Moderate and severe pain groups showed more improvement than mild pain group.

Conclusions: This study suggests that patients in the moderate and severe pain groups had impaired quality of life, and were treated with higher dose opioids. This group had better pain relief by adding higher dose opioids and other adjuvant drugs.

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META-ANALYSIS OF TWO RANDOMIZED STUDIES EVALUATING A DEXAMETHASONE-SPARING REGIMEN IN WOMEN RECEIVING AC-BASED CHEMOTHERAPY: IMPACT OF AGE ON ANTI-EMETIC RESPONSE

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Objectives: Age younger than 50 years has been identified as a risk factor for developing CINV. Data from two phase III studies of a dexamethasone (DEX)-sparing anti-emetic regimen in MEC were assessed for potential effect of age on treatment outcome.

Methods: 405 chemo-naïve women receiving anthracycline plus cyclophosphamide (AC)-based chemotherapy were randomly assigned to receive palonosetron (PALO) 0.25 mg plus DEX 8 mg IV on day 1 of chemotherapy (1-day regimen, n=200) or the same regimen followed by DEX 8 mg orally on days 2 and 3 (3-day regimen, n=205). The primary endpoint was complete response (CR, no emesis, and no rescue anti-emetics) in the 5-day study period. The effect of the 1-day regimen and age (<50 and ≥50 years) was investigated by a modified intention-to-treat approach. Meta-analysis of individual patient data was performed using the CR in the overall study period as dependent variable.

Results: Patients younger than 50 years comprised 43.5% and 49.3% of the 1-day and 3-day regimen groups, respectively. Among patients receiving the 1-day regimen, 55.2% of younger patients achieved overall CR compared with 54% of older patients. In the 3-day regimen group, 51.5% of younger patients achieved overall CR compared with 58.7% of older patients. In the adjusted analysis, younger age was not associated with CR to anti-emetic treatment (risk difference, −3.1%; 95% CI, −13 to 6.7%; P=0.533).

Conclusions: Younger age is not associated with decreased benefit in terms of overall CR from use of PALO plus single-dose DEX in women receiving AC-based chemotherapy.

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HOW TO MEASURE COGNITIVE ABILITIES IN CANCER PATIENTS (COMPUTERIZED PSYCHOMETRIC TESTING BY COMPLEX REACTIOMETER DRENOVAC)

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Introduction: Cancer patients are very vulnerable to neurocognitive dysfunction. One of the most complex problems in previous studies was how to measure cognition. Some of the tests used in clinical practice are not sufficiently sensitive. Other tests are too expensive and sophisticated to be used in everyday work.

We used computerized laboratory—Complex Reactiometer Drenovac (CRD) for that purpose.

Patients and methods: In Clinical Hospital Center of Rijeka, Croatia about 200 pts with solid and hematologic malignancies were evaluated for cognitive abilities by Complex Reactiometer Drenovac (CRD), computerised psyhodiagnostic laboratory different from the standard set instruments, based on chronometric aproach to the examination of dynamic properties and functional features of the central nervous system. Four electronic instruments measures: perceptive abilities, memory, thinking, psychomotor reactions (simple and complex), dynamic features of CNS function and functional disturbances. Previously used in healthy persons (sport medicine, military, professional, school medicine etc.) we applied this method in clinical research in cancer patients.

Results: We measured cognitive abilities and made norms in therapy naive cancer patients. In smaller number of patients we tested cognition before and after chemotherapy (in lymphoma patients), before and after correction of anemia in anemic cancer patients (esspecially during erythropoetin therapy), and we graphycally showed repetitive individual tests during course of disease.

We found CRD very sensitive, not expensive, not invasive, very little time consuming, and very applicable in everyday clinical practice.

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DIAGNOSIS, TREATMENT AND USE OF INTRAVENOUS IRON FOR CHEMOTHERAPY-INDUCED ANAEMIA IN NINE EUROPEAN COUNTRIES

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Objectives: Cancer patients frequently experience chemotherapy-induced anaemia (CIA). Intravenous (I.V.) iron supplementation of erythropoiesis-stimulating agents (ESAs) is a proven CIA-treatment. This study evaluated current practice in managing CIA and use of I.V. iron.

Methods: Onco-haematologists were surveyed on their last five patients treated for CIA in two waves: Wave 1 (France, Germany, Spain, Switzerland, UK; Jun–Oct 2009), Wave 2 (Austria, Italy, Netherlands, Sweden; Aug–Nov 2010). Results are presented as median [range] between countries.

Results: 375 physicians recorded 1730 cases (52% [30–60%] with metastatic disease). Blood tests at anaemia diagnosis included haemoglobin (96% [86–99%]), ferritin (49% [23–60%]) and transferrin saturation (12% [2–25%]). ESA-treatment was most common (73% [15–100%]) and 52% [11–93%] received a transfusion at some stage. Iron was given to 22% [11–61%], of whom only 19% [4–77%] received I.V. iron.

Detailed questions during Wave 1 showed that iron treatment was mainly initiated by onco-haematologists (96% [75–98%]) and infusions primarily performed by nurses (83%). Overall, 'Quick onset of action' was the most common reason for selecting I.V. iron (36%), whereas convenience rather than efficacy related arguments were the main basis for using oral iron ('Easy/convenient administration' [53%], 'familiarity' [46%]).

Conclusions: Utilisation of tests and treatment options to assess and manage iron deficiency (ID) in CIA patients varies across Europe. Overall, markers of absolute and functional ID (ferritin and TSAT) are underused and only few CIA patients receive I.V. iron despite clinical evidence on its efficacy. Awareness of evidence on the role of I.V. iron to resolve ID needs to be broadened.

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AVAILABILITY OF OPIOIDS FOR CANCER PAIN: A GLOBAL PERSPECTIVE

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Opiods are indispensable for the treatment of severe acute and chronic pain (myocardial infarction, surgery, cancer, HIV, etc). WHO estimates that around the worlds 5,4 million cancer patients suffer from untreated cancer pain. An empiric tool (adequacy of consumption measure ACM) was developed at the request of the International Narcotics Control Board to assess how adequate moderate and severe pain is controlled. ACM is based on the consumption of all strong opioids. Results have shown that most of the population of the world lives in countries where there is no opiod consumption (4718 mil people), very low (457 mil) and low (255 mil). Reasons for this situation are multiple: social and cultural values, economic problems, drug regulation, health care systems, caregivers and even the patient but restrictive policies, economic issues and knowledge and attitudes remain the most prominent ones. In the European region the ATOME project (Access to Opiod Medication in Europe) is funded by the European commission with the aim to improve the access to opoid medication in 12 European target countries (Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia, Hungary, Serbia, Greece, Cyprus, Turkey, Bulgaria). The project is developed over a period of 5 years (2009–2014), involves 10 partners and targets changes at different levels: national policies and national capacity building in the target countries, development of tools (a new revised guideline has been already produced by the WHO "Ensuring balance in national policies on controlled substances. Guidance for availability and accessibility of controlled medicines"), and also fosters research collaboration and sharing in the European region. Activities and results will be presented.

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ITALIAN GUIDELINES FOR PREVENTION AND MANAGEMENT OF CANCER THERAPY-INDUCED MUCOSITIS IN CHILDREN

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Introduction: While early diagnosis and advances in the cancer therapy for children continue to improve resulting in higher survival rate, oral complications remain a significant cause of morbidity and potential mortality. Long term oral side effects affect more children and adolescents than adults with high incidence. Mucositis are recognised as common acute sequelae with risks for severe pain, malnutrition, potential source of systemic infections resulting in increased hospitalization and higher costs of care.
Aim: This report describes the National Italian Guidelines for prevention and management of cancer therapy-induced mucositis.
Methods: A panel of experts coordinated by the Italian Minister of Welfare planned to elaborate the Italian guidelines. The structure of the guidelines has been planned to follow the principles of science based dentistry. The main procedure was based on a hierarchic evaluation of literature.
Results: Preventive oral protocols are based on a multidisciplinary collaborative team approach. Oral health care providers play an important role in the assessment and management of paediatric patient undergoing cancer therapy. Stabilization of oral and dental infections prior to treatment and conditioning can reduce the incidence and severity of oral and/or systemic complications. Cancer therapy-induced immunosuppression represents a high risk for opportunistic infections coming from oral cavity. A pre-cancer therapy evaluation is essential to decrease oral problems during and after treatment.
Conclusion: The guidelines are planned for paediatric dentists, dental hygienists and to all the oncology team. The guidelines are also designed to be of interest also for parents and/or guardians of the children.

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TOPICAL MENTHOL: A NOVEL INTERVENTION THAT IMPROVED CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY (CIPN) RELATED PAIN AND PHYSICAL FUNCTION

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Objectives: CIPN is a common post-treatment toxicity. Many patients are left with long-term pain and disability which is difficult to treat. Colleagues' preclinical work showed analgesic effects of topical transient receptor potential melastatin receptor (TRPM8) activators in neuropathic pain(Proudfoot, Current Biol 2006;6;1591–1605). We therefore conducted a proof-of-concept study using menthol for patients with CIPN.
Methods: 29 patients a median of 10 months post-treatment (range 2 to 35) with bortezomib(n=2), carboplatin(n=1), taxanes(n=2), cisplatin(n=3) and oxaliplatin(n=21) applied 1% topical menthol, twice daily to affected areas and skin overlying corresponding dorsal root ganglia. At baseline and 6 weeks, patients completed: Brief Pain Inventory(BPI) and objective assessments of gait (electronic walkway), hand dexterity (peg-board) and Quantitative Sensory Testing. Analysis: Wilcoxon signed-rank test and Pearson product-moment correlation.
Results: Average BPI scores decreased (median 4.0[range 1.1 to 7.9] versus 2.7[0 to 8.3],p=0.002). 83% described less pain and 52% had ≥30% BPI decrease (deemed clinically significant). There were corresponding improvements in walking velocity(r=−0.743,p=0.009), cadence (r=−0.766, p=0.006) and hand dexterity (r=0.487,p=0.065). Glove and stocking distribution of sensory disturbance decreased distally (abnormal response to cool, warm and calibrated brush stimuli respectively: 73% of distal limb portion [0 to100] versus 37%[0 to100],p=0.037; 70%[0 to100] versus 24%[0 to 95],p=0.004 and 45%[0 to100] versus 23%[0 to 84],p=0.088). Six patients discontinued treatment after 2 weeks: 1=progressive disease; 3=difficulty applying cream, 2=worse discomfort (later resolved).
Conclusion: This promising CIPN intervention worked relatively quickly and improved both subjective CIPN pain scores and objectively measured physical function and sensory disturbance. A randomised-controlled trial is planned.

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DELAYED AND OVERALL CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV) IN CANCER PATIENTS ON SINGLE-DAY LOW EMETOGENIC CHEMOTHERAPY (LEC)

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Objective: Evaluate rate of delayed CINV (days 2–7 of a CT cycle) among patients with cancer on single-day LEC and overall (acute and delayed) CINV events among these patients on antiemetic prophylaxis with palonosetron [Group 1] versus other 5-HT_3 receptor antagonists (5-HT_3-RAs) [Group 2] in a hospital outpatient setting.
Methods: Patients aged ≥18 years with cancer diagnosis initiating single-day LEC for the first time between 4/1/2007–3/31/2009 were identified from the Premier Perspective database. Delayed CINV events (ICD-9-CM codes for nausea, vomiting, or volume depletion or CINV-related rescue medications) were assessed descriptively. A negative binomial generalized linear multivariate regression model estimating the overall CINV event rate among group 1 and 2 patients in the follow-up period [first of 8 chemotherapy (CT) cycles or 6 months) was developed.

Results: Among 2,611 study patients, a total of 8,783 overall CINV events were identified. In first cycle, of 3,184 events, 2,996 (94.1%) events were delayed. Average number of delayed events per patient remained consistent throughout the 8 cycles [3.1 (1st cycle) vs. 2.9 (8th cycle); p=0.842)]. Among 2,439 patients on antiemetic prophylaxis with a 5-HT_3-RA, 10.1% (n=247) initiated palonosetron. Regression analysis indicated that group 1 patients (versus group 2) had a 15.2% reduction in CINV event rate per CT cycle; p=0.0403.
Conclusion: In this retrospective analysis, delayed CINV comprised a major proportion of overall CINV events among cancer diagnosed patients on single-day LEC. Additionally, palonosetron prophylaxis was associated with a significantly lower rate for overall CINV events versus other 5-HT_3-RA prophylaxis.

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DYSPHAGIA PROFILE CHANGES ACCORDING TO CONDITIONING REGIMENS IN CANCER PATIENTS UNDERWENT HIGH DOSE CHEMOTHERAPY AND STEM CELL TRANSPLANTATION

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Patients that underwent high dose chemotherapy(HDC) and stem cell transplantation(SCT) experience dysphagia frequently. This study was done to evaluate the frequency and severity of dysphagia in the early period of transplantation and the relation of conditioning regimens with dysphagia.
Patients who underwent HDC and SCT were asked to score dysphagia severity daily from day 1–10 of reinfusion. Scoring was performed according to a five-grade scale (0: no symptom; 1:mild; 2:moderate; 3:severe; 4:very severe). Total dysphagia score(TDS) was defined as the addition of symptom severities of dysphagia in 10 days. A total of 113 patients were included to the study. BEAM(n=44), ICE(n=29), Melphelan 200 mg/m2 (M200) (n=12) and total body irradiation + Cyclophosphamide (TBI + C) (n=28) were used as conditioning regimens.
Results: All of the patients experienced dysphagia at any grade. Patients who scored grade 3 and 4 dysphagia was higher on day 7 when compared with day 1(38.6% vs 9%, p<0.05). TDS in M200 and TBI + C group was significantly higher in days 7 to 10 when compared to BEAM and ICE groups(p<0.05). TDS was not different when compared BEAM and ICE groups. TDS was higher in women from days 7 to 10, and inverse correlation with white blood cell count was found with dysphagia in days 5, 8, 9, and 10(p<0.05). The mean percentages of patients who scored severe or very severe dysphagia in 10 days was 13.85% in BEAM, 18.23% in ICE, 28.32% in M200 and 27.01% in TBI + C treated groups.
Conclusion: TBI + C and M200 treated patients faced more dysphagia 7 to 10 days after stem cell reinfusion.

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ASSOCIATION OF FEELING OF WELL-BEING AND OTHER CANCER-RELATED SYMPTOMS IN AMBULATORY ADVANCED CANCER PATIENTS ACCORDING TO PRIMARY TUMOR SITES

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Introduction: There are limited studies to evaluate if quality of life varies among different cancer patients receiving Palliative care. The aim of this retrospective study is to determine the association of feeling well being (FWB), a single item (1–10) on Edmonton Symptom Assessment System (ESAS), and cancer-related symptoms according to different primary cancer types in ambulatory ACP.
Methods: ESAS scale was assessed by a trained nurse in 639 consecutive patients referred to Outpatient Palliative Care clinic. Patients with Delirium, psychiatric illness were excluded. Multivariate regression analyses and Kruskal-Wallis test were used to identify the predictive factors and differences between cancer types.
Results: Mean age 59 (SD 13), Median 59, 49% female. Most common cancer type was Breast 14.7%. Mean FWB 3.6 (SD 3), Median 4. Fatigue, Depression, Anxiety, Anorexia, and Symptom Distress score were correlated with FWB in all tumor types (p<0.05). Predictors of FWB were: all patients-pain (p<0.0001), fatigue (p<0.0001), depression (p<0.0001), anxiety (p<0.0001), anorexia (p<0.0001), drowsiness (p=0.036); breast cancer- pain (p<0.033), depression (p<0.0001), anorexia (p=0.048), dyspnea (p=0.043); prostate cancer- depression (p=0.039), anxiety (p=0.037), anorexia (p<0.0001); head and neck- anxiety (p=0.005) anorexia (p<0.0001); colorectal- anxiety (p=0.018), anorexia (p=0.006); cervix- pain (p=0.047), fatigue (p<0.0001), anorexia (p<0.0001); esophago-gastric- pain (p=0.001), fatigue (p=0.001), anorexia (p=0.002). Different cancers differ in terms of depression (p=0.02) and dyspnea (p=0.002), but not FWB.
Conclusion: Pain, Fatigue, Depression, Anxiety, Anorexia, Drowsiness were associated with FWB. Different cancers do not differ in terms of FWB.

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HOW HIGHLY DO PATIENTS AND CAREGIVERS RATE SPECIFIC TOPICS FOR SUPPORT GROUP DISCUSSION? RESULTS OF A STUDY INCLUDING 3728 PARTICIPANTS

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Objectives: This study was conducted to determine which topics patients and caregivers rank as most important for discussion and presentation in cancer support groups. To date, little data exist to understand the needs of our patients and families.

Methods: Demographic characteristics, clinical factors, and support group content preferences of patients and caregivers were assessed using the web-based information resource NexCura®. Participants ranked 26 topics on a 5-point Likert scale weighing the importance of each item in this anonymous survey. In this analysis, topics were ranked by the percentage of responders selecting the top 2 categories: "very important or important."

Results: 4402 respondents resulted in 3728 participants (85%). Characteristics: 70% women, mean age 58 (range 20–89); 90% were patients, 10% were caregivers. More than 20 cancer types are represented in this survey. The table shows the 9 highest rated topics (of a total of 26): *[Table 1]*

Topics (Top 9 rated of 26)	Patients Rank Order: Very Important + Important	Caregivers Rank Order: Very Important + Important
Cancer treatment choices	95.0% (1)	95.1% (1)
Side effects and their prevention	93.3% (2)	95.1% (2)
Living with a cancer diagnosis	91.3% (3)	92.3% (4)
Making decisions about care	89.9% (4)	91.9% (5)
Talking with health professionals	88.6% (5)	89.5% (7)
Dealing with ansiety/ depression	85.2% (6)	92.5% (3)
Uncertainty of cancer	84.7% (7)	86.6% (10)
Stress and stress management	84.6% (8)	90.1% (6)
Navigating the health system	84.2% (9)	88.2% (8)

Conclusions: This is the largest survey concerning support groups from the point of view of patients and caregivers. Seven of the top nine topics involve supportive care. In general, participants ranked educational or informational issues above social support. These results should guide the content of support groups to meet the needs of patient and caregivers.

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THE EFFECTS OF NORCANTHARIDIN ON THE REACTIVE OXYGEN SPECIES AND MITOCHONDRIAL MEMBRANE POTENTIAL IN HUMAN MGC-803 CELLS

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Norcantharidin (NCTD), a chemically modified form of cantharidin, is a potential anticancer drug. NCTD has been used to treat human cancers such as hepatic, gastric, colorectal and ovarian carcinomas. However, the mechanism of NCTD on cancer cells is unclear until now. Confocal microscopy has become a routine technique and indispensable tool for cell biological studies and molecular investigations. There are numerous scientific papers employing confocal microscopy in cell biology research. Since confocal microscopy is an appropriate method for quantitative and qualitative analysis of cells, the effects of NCTD on the reactive oxygen species (ROS) and mitochondrial membrane potential (MPP) was investigated in the human MGC-803 cells with confocal microscopy in the present studies. In addition, NCTD cytotoxicity was evaluated by using a MTT (3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyl tetrazolium bromide) reduction conversion assay. The results indicated that the cellular viability was decreased with the increase of the concentration of NCTD. Moreover, the fluorescence intensity of ROS in MGC-803 cells was increased with the increase of the concentration of NCTD. However, the MPP of MGC-803 cells was decreased with the increase of the concentration of NCTD. The results indicated that NCTD could induce ROS and decrease MPP in MGC-803 cells. ROS and the MPP may participate in the processes of cell apoptosis.

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PROMOTING POSITIVE PALLIATIVE CARE PRACTICES FOR PEDIATRIC PATIENTS

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Despite advancements in medicine and technology among children with chronic medical conditions, approximately 50,000 children experience premature death from congen-

ital diseases, heritable disorders, or acquired illnesses each year in the United States (Guyer et al., 1999). Prior to children's deaths, it is essential to provide supportive care to enhance their quality of life in the face of an ultimately terminal condition. Specifically, *palliative care* is needed to minimize stress caused by the condition, with the goal of improving children's overall quality of life (American Academy of Pediatrics, AAP, 2000). Despite the AAP's development of five essential principles for palliative care, implementation of an integrated palliative care program within the hospital context is complicated at best. Personal, financial, and systemic barriers to the provision of palliative care services exist, which may result in children's limited receipt of support or their suffering an unnecessarily poor quality of life prior to death. It is, therefore, essential that minimum standards of palliative care be intentionally implemented and that psychologists offer their expertise to minimize barriers. The current presentation seeks to

(a) highlight AAP principles and standards for palliative care;

(b) review barriers to the provision of such care within the pediatric setting;

(c) offer recommendations for intervention; and

(d) emphasize the value of psychologists in management and provision of support for children receiving palliative care services.

Attendees can expect to participate in an interactive format, sharing personal experiences and challenges, along with providing suggestions for enhancing palliative care models within the hospital milieu.

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EFFECT OF EVEROLIMUS AN ANTI MTOR THERAPY, ON SKELETAL MUSCLE WASTING IN PATIENTS WITH METASTATIC RENAL CELL CARCINOMA (MRCC)

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Introduction: We have reported that sorafenib induces muscle wasting in mRCC. As everolimus exerts its antineoplastic effect through inhibition of the mammalian target of rapamycin (mTOR), we hypothesized that muscle wasting would be also an important side effect of everolimus therapy.

Methods: Patients with mRCC enrolled in RECORD 1 (everolimus (E) or placebo (P)) in our institute were analyzed for this study. CT image analysis, which has high precision and specificity for evaluation of specific muscles, was used to define change in total skeletal muscle. Images were analyzed using Slice-O-Matic software.

Results: 35 patients were evaluable, 10 on P and 25 on E. In addition, 9 patients initially on P could cross to E and were analyzed both on P and on E. Placebo patients had stable body weight, with no significant mean gain or loss of muscle. By contrast, patients on E lost body weight over time (kg): −2.5±3.6 by 83 d (p=0.02), −4.9±5.7 (p=0.005) by 167 d and −5.0±7.6 (p=0.02) by 286 d. E patients progressively lost skeletal muscle compared. with baseline from −2.5±5.9% at 83 d (p=0.06), to −4.0±7.5% at 167 d (p=0.03) and −4.8±6.8% at 263 d (p=0.01). Interestingly, the 9 patients who had maintained body weight (+2.0 kg) and muscle (+2.7%) whilst on placebo, and crossed to E, lost weight (−4.8 kg, p<0.03) and skeletal muscle (−5.3%) (about 1.5 kg of muscle) when crossed to E.

Conclusions: Body weight and muscle wasting are induced by everolimus in mRCC, and are not related to progressive disease. These changes increase over time.

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EVALUATION OF AN EXERCISE PROTOCOL DURING (CHEMO)RADIATION TO PREVENT SPEECH, SWALLOWING AND SHOULDER PROBLEMS IN POSTOPERATIVE ORAL CANCER PATIENTS

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Objectives: In head and neck cancer patients, speech and swallowing problems occur in 34-75% after surgery. Exercises during (chemo)radiation may be beneficial, however its feasibility has never been studied before. The aim of this pilot study is to investigate the feasibility of an exercise protocol during postoperative (chemo)radiation among patients with oral or oropharyngeal cancer aiming at prevention of speech, swallowing and shoulder problems after treatment.

Methods: Eleven patients of 75 years of age or younger treated by composite resection with microvascular free flap reconstruction and adjuvant (chemo)radiation for stage II-IV oral or oropharyngeal carcinoma were included in this study. They performed an exercise protocol at home during six weeks of radiotherapy. The protocol "Halszaken" (Head Matters) consists of flexibility exercises for head, neck and shoulders and of voice, speech and swallowing exercises. To obtain insight in feasibility, patients were asked to fill out a diary.

Results: Exercises were easily learned. According to the diaries, all patients practiced at least once a day in the first four weeks. Five patients practiced 2–3 times a day during six weeks. Five patients practiced 2–3 times a day during 3–4 weeks. One patient practiced 1–2 times a day during four weeks. Compliance seems to be satisfactory, considering the demands on patients by the extensive combined surgical and radiation treatment.
Conclusion: Exercising during radiotherapy is feasible. A large prospective study on cost-effectiveness of the exercise protocol is ongoing for which a website (www.halszaken-vumc.nl) and a DVD are developed with examples of the exercises.

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PROSPECTIVE SCREENING FOR PATIENT REPORTED SPEECH AND SWALLOWING PROBLEMS IN HEAD NECK CANCER PATIENTS VIA A TOUCH SCREEN COMPUTER SYSTEM

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Objective: To investigate prospectively the occurrence of patient reported speech and swallowing problems before and after treatment and the impact of these problems on quality of life and emotional wellbeing in head and neck cancer (HNC) patients via a touch screen computer system (Oncoquest).
Methods: 70 HNC patients completed the online versions of the EORTC QLQ-C30 and EORTC QLQ-H&N35 health related quality of life questionnaires and the Hospital Anxiety and Depression Scale (HADS) from baseline (before attending the clinic) to follow-up (after treatment). Patients were treated by surgery (n=17), radiotherapy (n=23), total laryngectomy (TLE) and radiotherapy (n=7), surgery and radiotherapy (not TLE) (n=9) or chemoradiation (n=14).
Results: No patient reported speech or swallowing problems at baseline or follow-up were noted in 21% (speech) and 41% (swallowing) of the patients. 20% (speech) and 20% (swallowing) had normal scores at baseline and developed problems at follow-up. 39% (speech) and 20% (swallowing) had persistent problems from baseline to follow-up. At follow-up patient reported speech outcome was significantly related to quality of life and emotional functioning. Before and after treatment patient reported swallowing outcome was significantly related to quality of life and emotional functioning.
Conclusions: The majority of HNC patients reported persistent speech and swallowing problems after treatment. Speech and swallowing problems in HNC patients have a significant impact on global quality of life and emotional wellbeing. Structured online monitoring of patient reported speech and swallowing complaints enables detection before and after treatment and, if necessary, referral to speech and swallowing rehabilitation.

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MULTIDISCIPLINARY TEAM: GENERIC IMPERATIVE

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Multidisciplinary teams have been implemented in cancer care systems throughout much of the western world. The rationale for introducing such teams should be to improve management of the disease complexity and to involve key professionals in making appropriate clinical decisions for each patient. The ideal management trajectory for an individual diagnosed with cancer should follow an interconnected path - one that requires input from qualified disciplines.
The complexity and variability of medical and psychosocial issues associated with cancer demand highly-skilled professionals to provide multilevel assessments and interventions throughout the illness continuum, treatments and terminal care. Furthermore, treatment and care recommendations do not always take into account the patient's family preference, cultural milieu and the wider psychological and social issues.
We will present a clinical vignette of family norms, and interrelated medical and psychological variances. Ethical conflicts between staff, family and patient often present a range of issues that may reveal a diversity of cultural, social and normative appraisals of patient-family care.

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SHOULDER DYSFUNCTION AFTER TREATMENT FOR BREAST CANCER IS BILATERAL AND MIMICS KNOWN SHOULDER CONDITIONS

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Objectives:
1. To describe the relationship between muscle activity and altered shoulder kinematics after treatment for breast cancer.
2. To evaluate whether observed differences in shoulder kinematics and muscle activity are explained in part by normal variation and/or key clinical variables.

4. To relate altered movement patterns in this population group to those seen in other known conditions of the shoulder.

Method: *151* women treated for unilateral carcinoma of the breast were included in the study. All patients filled out the Shoulder Pain and Disability Index (SPADI). 3D - kinematic data for the humerus and scapula was recorded during arm elevation on both sides for patients and age matched healthy volunteers. Real-time EMG data for four key muscles was collected concurrent with kinematic data. All data was analysed using the MotionMonitor™ system.

Results: Patients demonstrated greater upward rotation on both the affected and unaffected sides compared to healthy subjects. Affected shoulders showed greater anterior tilt than healthy shoulders. Mastectomy patients demonstrated the same movement dysfunction as that seen in WLE but the magnitude of the change was bigger. Mastectomy patients also reported significantly higher pain scores and demonstrated significant movement dysfunction during the critical phase of arm elevation. Altered muscle activity was evident on both sides and contributed to the movement deviation of the scapula.

Conclusion: Both shoulders demonstrate altered movement patterns after treatment for breast cancer. The patterns of deviation identified were the same as those found in common shoulder conditions such as impingement and rotator cuff disease.

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RANDOMIZED DOUBLE-BLIND PLACEBO-CONTROLLED STUDY OF *LACTOBACILLUS BREVIS* CD2 LOZENGES FOR RADIATION- AND CHEMOTHERAPY-INDUCED MUCOSITIS IN HEAD AND NECK CANCER PATIENTS

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Objectives: Oral mucositis is a frequent and serious complication in patients receiving chemo-radiotherapy for head and neck squamous cell carcinoma. The present study evaluated the effects of administering *Lactobacillus brevis* CD2 lozenges on the incidence and severity of mucositis and tolerance to chemo-radiotherapy (CRT).

Methods: 200 patients suitable for chemo-radiotherapy were enrolled in a randomized, double-blind study to receive daily treatment with lozenges containing either *L. brevis* CD2 or placebo at AIIMS, New Delhi from January 2007 to February 2009. Anticancer therapy consisted of RT 70 Grays/35 fractions over 7 weeks with weekly Inj. Cisplatin 40 mg/m^2. The study treatment was given during, and for 1 week after completion of, anticancer therapy. Primary endpoints were the incidence of Grade III and IV oral mucositis and the percentage of patients able to complete anticancer treatment.

Results: The efficacy analysis included the 188 patients who received ≥1 week of study treatment. Grade III and IV mucositis developed in 52% of patients in the *L. brevis* CD2 arm and 77% in the placebo arm ($P<0.001$). Anticancer treatment completion rates were 92% in the *L. brevis* CD2 arm and 70% in the placebo arm ($P=0.001$). A larger proportion of patients remained free of mucositis when treated with *L. brevis* CD2 (28%) compared to placebo (7%).

Conclusions: *L. brevis* CD2 lozenges reduced the incidence of Grade III and IV anticancer therapy-induced oral mucositis and was associated with lower overall rate of mucositis and a higher rate of anticancer treatment completion.

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SECULAR TRENDS IN OVARIAN CANCER ADMISSIONS TO A LARGE GENERAL HOSPITAL DURING THE PERIOD 2000–2007

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Introduction: Ovarian cancer remains the leading cause of death amongst gynaecological cancers. There is a lack of information on the demographics of ovarian cancer admissions, ethnicity and length of hospital stay.

Methods: We observed ovarian cancer admissions to a large general hospital during the period 2000–2007. Patients diagnosed with ovarian cancer were traced using the ICD-10 criteria which had not changed during this study period. Similar methods have been previously used.

Results: 403 patients with ovarian cancer had been admitted during the study-period, mean age 66.8 years. 303 patients were admitted as emergencies while 100 patients had been admitted for elective surgery. There was a steady increase (70.3% 2000/01 to 77.3% 2006/07) in the number of emergency hospital admissions for ovarian cancer although the mean duration of stay in hospital decreased (12 days 2000/01 to 7 days 2007/07,$p<0.05$). Majority of cases were Caucasian (2000/01-72.0% to 2006/07-81.3%) compared with the local caucasian population of 67.8%.

Conclusion: The overwhelming majority of ovarian cancer is diagnosed at an advanced stage with non-specific

symptoms at presentation. This is reflected by the large number of emergency hospital admissions amongst our patients. Better education and awareness regarding ovarian cancer, its vague presentation and other clinical features should be the focus amongst both general physicians and patients as invariably emergency admission confers worse prognosis. Length of hospital stay decreased over the study period which may suggest an improvement in the treatment and management of ovarian cancer and a more effective healthcare service. Further research is required into ethnic variation of ovarian cancer.

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CLINICAL PICTURE OF CUTANEOUS INFECTIONS IN CANCER PATIENTS

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Background: Cutaneous infections (CI) are a frequent reason for consulting. The immunosuppression associated with cancer and/or treatment can promote the emergence of CI. This study described their clinical and biological characteristics.
Methods: A 3-years retrospective study was conducted in emergency cancer center. All patients who consulted for Erysipelas (Er) were studied. Post-operative skin infections were excluded. Er was defined as the presence of inflammatory skin signs whatever the temperature value.
Results: 57 patients were included. Cancer types: breast (n=29), pelvis (n=15), sarcoma and melanoma (n=6) and miscellaneous (n=7). Forty patients were submitted to surgery, 32 underwent lymph node dissection and 29 had previously received radiotherapy.30 patients were afrebrile. Local signs were minor in 12 and 2 patients had severe manifestations. CRP <50 mg/l(n=26). Leukocyte >10000/mm^3 was present in 22 cases. no difference between clinical and biological characteristics of Er in the breast or the upper limb (n=30), nor of those affecting the pelvis or the lower limb (n=26). There was also no difference between Er with a local risk factor and those devoid of (n=8). Blood cultures were positive in 6/43 cases, *Streptococcus sp.* (n=4), *coagulase negative staphylococci* (n=1). All patients were successfully treated with antibiotics over an average of 16.8 days. Nine recurrences were occurred in 8 cases at interval of 2.5 months.
Conclusion: The evolution of erysipelas is favourable in cancer patients. However clinical and biological aspects can be atypical: low bacteraemia, 50% was afebrile and more than 30% were without high leukocyte level.

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FIRST CLINICAL EXPERIENCES WITH R1 AND R2, A LACTOKINE-BASED MEDICAL DEVICE, FOR PROPHYLAXIS OF RADIATION DERMATITIS IN CANCER PATIENTS

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Background: Radiation dermatitis occurs in nearly 95% of all patients receiving radiation therapy in the head and neck area. Currently, there are no evidence-based regimens for prophylaxis of radiation dermatitis or any standardized treatment recommendations. “R1 and R2” is a novel lactokine-based class I medical advice consisting of R1, a water-based gel which offers intense hydration to the skin while providing cooling relief and protecting skin against inflammation, and R2, a soothing lotion with anti-inflammatory properties and high UVB and UVA protection.
Aim: To provide first clinical experiences with R1 and R2 for prophylaxis of radiation dermatitis in a case series of cancer patients.
Methods: Between October 2010 and January 2011 21 patients with locally advanced head and neck cancer undergoing radiochemotherapy and 8 patients with breast cancer undergoing radiotherapy applied R1 and R2 to the irradiated skin from the first day of radiotherapy. R1 was applied once a day, R2 was applied four times a day. Clinical response was assessed during and shortly after radiotherapy, including photo documentation.
Results: Application of R1 and R2 was well tolerated without any toxicities seen. In most of the patients radiation dermatitis was mild. A detailed analysis will be presented.
Conclusion: Our case series reveals that the application of R1 and R2 is feasible, safe and effective for prophylaxis of acute radiation dermatitis. Currently, we are conducting a randomized, controlled clinical trial in more than 100 patients examining R1 and R2 for prophylaxis of radiation dermatitis in head and neck cancer patients.

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HEALTH-RELATED QUALITY OF LIFE, AND THE NEED FOR INFORMATION AND SUPPORTIVE CARE IN OLDER ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION RECIPIENTS

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Objectives: Since early results suggest that allogeneic Hematopoietic Cell Transplantation (HCT) improves traditional medical outcomes of the elderly patients (>60 years) with acute myeloid leukemia (AML) they are no longer excluded for this treatment. However, allogeneic HCT in elderly is relatively new, and Graft Versus Host Disease (GVHD) and medication to prevent GVHD can produce significant side effects. More insight is therefore warranted regarding quality of life (QoL) and need for information and supportive care in this patient population compared to younger patients.
Methods: Nine allogeneic HCT recipients >60 years and nine Allogeneic HCT recipients <60 years were asked to participate. The elderly participants' mean age was 67 years at time of transplantation versus 52 years in the younger recipients. Patients were transplanted within the last 5 years. The study consisted of two consecutive phases: a quantitative phase in which the selected patients were asked to respond to various (QoL) questionnaires and a qualitative phase in which items on information needs, supportive care needs and decision making process were discussed through semistructured interviews.
Results: This cross-sectional single center study using the EORTC quality of life C30, the Hospital Anxiety and Depression Scale (HADS), and the Functional Assessment of Cancer Therapy-Bone Marrow Transplant (FACT-BMT) for data collection is ongoing. Results will be presented at the MASCC congress in Athens, June 2011.
Conclusions: More insight in QoL and need for information and supportive care will help decision-making and planning integrated care for the elderly recipients.

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HEALTH CARE RESOURCE USE AMONG ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC) PATIENTS AFTER SUCCESSFUL FIRST-LINE THERAPY: A FRENCH SAMPLE

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Objective: Clinical guidelines include recommendations for anti-cancer therapies but not how to monitor advanced NSCLC patients during intervals when they may not receive active therapy. This study describes resource use during the interval between completion of first-line therapy and tumor progression (ie, maintenance phase).
Methods: Using a web-based questionnaire, physicians in France who routinely treat NSCLC patients provided clinical and resource use data for patients who had not progressed on first-line therapy. Data collection spanned NSCLC diagnosis to most current status. Data were described with summary statistics.
Results: From January to April 2010, 116 physicians provided data for 504 patients (69% male, 65% Stage IV, and 70% with partial response to first-line therapy). Maintenance drug therapy was reported for 13%. The table summarizes resource utilization.

Resource	First-line		Maintenance Phase	
	N	Mean per Patient (standard deviation)	N	Mean per Patient (standard deviation)
Inpatient hospitalizations	340	2.3 (2.7)	238	0.5 (1.3)
Outpatient hospitalizations	287	3.6 (4.1)	216	2.4 (2.8)
Oncologist visits	334	3.2 (3.6)	269	2.1 (2.3)
General practitioner visits	190	1.9 (2.1)	173	1.3 (1.8)
Pulmonologist visits	312	1.8 (2.8)	231	1.0 (1.7)
Blood tests	288	7.1 (6.2)	225	2.4 (2.8)
Computerized tomography	347	2.2 (1.0)	259	1.7 (1.1)

[Common Resources Used by Therapy Phase]

Conclusions: Most care provided to advanced NSCLC patients in the maintenance phase was outpatient. Further statistical analyses will allow formal comparison of resource use in the maintenance phase relative to first-line therapy.

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EVALUATION OF A NURSE-PHARMACIST LED UROLOGY CHEMOTHERAPY CLINIC AND PRO-ACTIVE TELEPHONE MONITORING PILOT

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Objectives: A pilot nurse-pharmacist chemotherapy clinic model was established to improve patient education, support and monitoring. Key objectives included; improved symptom management, earlier identification of toxicities and effective medicines reconciliation.

Methods: The pilot was established in May 2009 and included patients prescribed oral Sunitinib for renal carcinoma, and intravenous Docetaxel for prostate cancer. Each patient underwent an initial 45 minute pre-treatment consultation which included a medicines review of interactions with chemotherapy. Patient education was supported by a structured pre-treatment check-list, chemotherapy alert card, chemotherapy patient scheduling diary and product and disease specific standard information. On treatment, 30 minute appointments replacing medical appointment were scheduled for alternate treatment cycles. Telephone consultations took place weekly throughout the first 6 weeks of treatment. Data was collected from the intervention and a control group using a 25 item patient survey and patient records.
Results: Data was obtained from 15 patients from the intervention group and 14 patients from a control group. More symptoms were identified and documented in the intervention group who also reported feeling more confident in managing their treatment related side-effects at home than the control. The intervention group were further more likely to contact the chemotherapy nurses if a treatment related problem arose. Medicines reconciliation was found to improve documentation of accurate medications and identification of potential interactions.
Conclusions: The pilot demonstrated the benefits of a structured nurse and pharmacist led chemotherapy clinic and has informed a new model of care.

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PALLIATIVE SEDATION FOR TERMINAL CANCER PATIENTS: A NORTHESTERN ITALIAN EXPERIENCE

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Objectives: We conducted a retrospective analysis to identify the prevalence and features of palliative sedation (PS) in providing relief from refractory symptoms to dying patients.
Methods: Clinical data of 144 consecutive cancer patients who died in the 'Palliative Care Area' from April 2008 to April 2010 were retrieved and analyzed. Of those, 55 received PS.
Results: Delirium was the single symptom that most frequently required the use of sedation.Other symptoms were dyspnea, psychological distress or existential suffering, pain, vomiting. In most cases PS was initiated on proposal of the oncologist; why resorting to this option and the aims of PS were always shared with family members and, when possible, with the patient. Most patients (n=39) received midazolam (2.5–5 mg IV, followed by a flat dose of 1–2 mg/hour in continuous infusion, depending on the depth of sedation required). Typically, artificial nutrition was stopped and the hydration lowered to a maintenance dose which also allowed a delivery route for other drugs. The mean duration of PS was 40 hours (range 2–168). The presence of dyspnea correlated with shorter duration of sedation (p=0.05).
Conclusions: In the presence of uncontrollable symptoms, PS remains a valid therapeutic strategy. Whenever possible, to share the decision with the patients and their relatives is crucial. Our analysis is broadly in agreement with literature data. However, the ethical implausibility to perform randomized studies makes hard to determine the real benefit of PS in symptomatic cancer patients at the end of life.

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RELATIONSHIP BETWEEN MUSCLE STRENGTH, BIOELECTRICAL IMPEDANCE (BIA) PHASE ANGLE AND FATIGUE IN CANCER

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Objective: To evaluate the association between fatigue, BIA derived phase angle and muscle strength in a population of untreated advanced cancer patients.
Methods: We evaluated prospectively 40 cancer patients (24: head and neck, 8: Lung Cancer and 8 with others). Inclusion criteria: PS:0–2, weight loss >5% in the last three months, fatigue >4 by Visual Analogue Scale (VAS) and the absence of oedemas. Following parameters were assessed by dynamometry: muscle strength (Baseline-1-2-3-4-5-6 minutes) and muscle strength (MS) (Maximal minus Minimal MS) for all the 7 measurements made previously, mean muscle strength, and the Grip Work were calculated. BIA derived phase angle was also determined. The same assessment was performed to a healthy-control population (n=20).
Results: Median fatigue (VAS) was 6 (range, 5–9). Muscle strength parameters were significantly different between patients and controls: Maximal Strength (Mean: 27±10.71 vs. 42±10.74) (p<0, 0001); Grip Work (Median: 1110 vs. 4792) (p<0, 0001); and muscle strength difference (max-min MS) was statistically different) (p<0, 0001) at all time comparisons. Median phase angle was 5 for the whole group, and was correlated with fatigue score (VAS) (r=−0.42) (p=0.0001). Phase angle was significant correlated with; grip work (r=0.45) (p<0,001) and % of weight loss (r=−0.43)

(p=0.03) in head and neck cancer patients and with grip work (r=0.85) (p=0.006) for Lung Cancer (Spearman Rank Correlation).

Conclusions: Our study suggests that phase angle is associated to muscle strength status, weight loss and fatigue in advanced cancer patients. Reefeding during treatment is being evaluated by our group.

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RANDOMIIZED CLINICAL TRIAL TO INCREASE COLONSCOPY SCREENING AMONG AFRICAN AMERICANS IN AN URBAN SETTING: PRELIMINARY RESULTS

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Objective: Colorectal cancer (CRC) screening and early detection may reduce the mortality of this disease in African Americans. Interventions based on the Trans-theoretical Model (TTM) and cultural sensitivity have been successful in increasing healthy behaviors. The TTM proposes that individuals undergo a series of stages in the process of deciding to adopt a behavior. The goal of this randomized clinical trial was to investigate the impact of culturally sensitive and stage-matched print educational materials on CRC screening via colonoscopy.

Methods: 159 African Americans, 50 years of age or older, at average risk for CRC were randomized to five groups: standard CRC print, stage-matched print, culturally sensitive print and navigated on barriers, culturally senditive print and non-navigated, and additive (stage-matched and culturally sensitive) materials. Participants were interviewed at baseline, and 3 months, 6 months and 12 months post-baseline. Medical charts were reviewed at 18 months to confirm colonoscopy screening status.

Results: Logistic regression predicting colonoscopy completion showed a marginally significant improvement for the stage-matched vs. the standard materials group (OR=8.4, 95% CI: 0.97–72.94, z=1.93 p=.054) as well as the additive vs. standard materials group (OR=8.4, 95% CI: 0.97–72.94, z=1.93, p=.054).

Conclusions: These preliminary results suggest that print materials that are stage-matched or stage-matched and culturally sensitive may increase screening via colonoscopy. Study limitations include the small sample size and a limited generalizability to the wider population outside African Americans residing in Upper Manhattan, NY.

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THE ELECTROGASTROGRAM AND BLOOD MARKERS IN PATIENTS WITH ADVANCED CANCER

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Objectives: Electrogastrography (EGG) is a technique used to record gastric myoelectrical activity (GMA). Our aim is to investigate:
(i) prevalent patterns of GMA
(ii) most frequent gastrointestinal symptoms reported on the dyspepsia symptom severity index (DSSI)
(iii) EGG diagnosis and correlations with gastrointestinal symptoms, Ghrelin and inflammatory markers.

Methods: An EGG was performed 10 min pre-prandial and 30 min postprandial after ingestion of 500 ml water. C-reactive protein (CRP), Ghrelin and Albumin were included at baseline.

Result: There were 53 patients enrolled, ages 18 to 82 years. EGG diagnoses: Mixed Dysrythmia (n=25), Tachygastria (n=15), Bradygastria (n=6), Gastric outlet obstruction (n=1) and Normal (n=6). Forty seven patients with an abnormal EGG had high median CRP, low median albumin and high median Ghrelin levels when compared to 6 patients with a normal EGG. CRP [12(8–22) vs 6(5–8)]; Albumin [35(26–40) vs 38.5(34–42)]; Ghrelin [4(2–10) vs 2.5(2–9)]. Most frequent Dysmotility like symptom were:
(i) frequent burping and belching [73.6%];
(ii) bloating [60.4%]
(iii) feeling full after meals [69.8%];
(iv) inability to finish normal size meal [66%]
(v) abdominal distention [51%] and
(vi) nausea after meals [50.9%].
The most frequent Reflux and Ulcer like symptom were: (i) regurgitation of bitter fluid [43.4%]; and abdominal pain before meals [39.6%].

Conclusions: Abnormal EGG diagnosis, ghrelin, albumin and CRP levels are found in the majority of patients with advanced cancer. Further studies are needed to better understand the correlation of these abnormal serum levels and their interaction with the pathogenesis of abnormal electrogastrographic rhythms.

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PALLIATIVE REHABILITATION: NOT AN OXYMORON

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Background: Palliative rehabilitation aims to assist the individual with advanced cancer to obtain optimal physical, social, psychological and vocational functioning within the limits created by the disease and its treatment.
Objective: To assess the effect of an interdisciplinary 8 week Palliative rehabilitation program(PRP) on the functional outcome of patients with advanced cancer.
Methods: Sixty nine patients were assessed pre and post PRP by physician, nurse, dietician, physiotherapist, occupational therapist and social worker. Assessment tools included: Edmonton Symptom Assessment Scale (ESAS), Distress Thermometer, Patient Generated Subjective Global Assessment (PGS-GA), MD Anderson Symptom Inventory (MDASI), 6 minute walk, Timed up and go, grip strength, Forward reach test, General Self Efficacy scale, Berg balance scale and Multidimensional Fatigue Inventory.
Results: This study included thirty seven males and 32 females; m age 54 years (32–90) with the following diagnosis: Breast (19%), Hematologic(14%), HNC(13%), Lung(13%), Colo-rectal(7%), Gastro-Esophageal(9%), Gynaecological (6%), Prostate(6%), Urogenital (4%), Liver Bile Duct(3%) and CNS, skin (4%).Nineteen patients have completed the PRP. Significant improvement was noted in;: tiredness (p=0.04), nausea (p=0.00), depression(p=0.00), drowsiness (p=0.01), appetite (p=0.00), feeling of well being (p=0.00). general activity (p=0.02), mood (p=0.00), work (p=0.01), walking (p=0.05), enjoyment (p=0.01), Coping thermometer (p=0.04), total PG-SGA score (p=0.03), total score Berg balance (p=0.01), Six minute walk test (p=0.04), reach forward (p=0.02) and timed up and go (p=0.02)
Conclusions: Preliminary findings suggest that participation in a palliative rehabilitation program improves physical functioning, nutritional intake and activity level.

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THE BENEFIT OF A PHYSIOTHERAPY DESIGNED PROGRAM FOR PATIENTS WITH ADVANCED CANCER AS A COMPONENT OF A PALLIATIVE REHABILITATION CLINIC

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Background: The Palliative Rehabilitation Program's (PRP) objective is to empower patients with advanced cancer who are suffering from the effects of cancer or the treatment thereof. Each new patient is assessed by a multidisciplinary team and a treatment plan is designed after the team consultation. The intervention includes a twice weekly gym program run by the physiotherapist for 8 weeks as well as follow-up appointments with other team members as is deemed appropriate.
Objectives: To design a program in which patients with different cancer diagnoses and physical problems could exercise together and safely.
Methods: Exercise programs were designed for patients. Adaptations to accommodate the special needs of individual patients were made. Assessment included a 6 minute walk, Berg balance, Forward Reach, Timed up and go, and Grip strength at the initial clinic visit and at the discharge clinic visit.
Result: Sixty nine patients, thirty seven males and 32 females; median age 54 years (32–90) were evaluated. Nineteen patients have completed the full program. No adverse event occurred. Median scores and ranges pre vs post 8 week PRP were: 6 minute walk test (meters) [282 (85–730) vs 337(232–776); p=0.00]; Berg Balance [55(47–56) vs 56 (50–56); p=0.01]; Reach forward (centimeters) [30(17–39) vs 35(0–48); p=0.05]; Time up and go (seconds)[10.4(0–18) vs 20(20–50); p=0.04]; Grip strength (Kilogram)[18(18–50) vs 20(20–50); p=0.16]
Conclusions: It is safe and beneficial for patients with multiple different physical problems due to cancer to exercise together in a physiotherapy gym. Significant improvements were noted in 4 out of 5 measured parameters.

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ARE PRO-INFLAMMATORY CYTOKINES AND ALTERED CORTISOL LEVELS ASSOCIATED WITH SEVERITY OF CANCER-RELATED FATIGUE?

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Objectives: Emerging data suggest that fatigue is associated with dysregulation of the hypothalamus-pituitary adrenal axis, marked by abnormal cortisol and excessive pro-inflammatory cytokines. This exploratory translational study seeks to investigate this hypothesis in a heterogeneous group of cancer survivors with cancer-related fatigue who are participating in a randomized clinical trial evaluating American ginseng vs placebo for fatigue.
Methods: Pearson coefficients related baseline fatigue (Brief Fatigue Inventory and Profile of Mood States-vigor) with salivary cortisol (morning and evening over 2 days) and plasma cytokines (IL6, sIL6R, IL1ra, sTNFR2) in study participants not receiving concurrent cancer treatment. Differences by fatigue phenotypes (4–6 vs 8–10) were analyzed by Kruskal-Wallis.

Results: 90 patients provided data. Characteristics were: 81% female, mean age of 59, 91% white, 68% breast cancer, 50% postmenopausal, 56% diagnosed over 1 year ago. Morning cortisol (nmol/L) was significantly higher in survivors reporting moderate, versus severe, fatigue (26.5 v. 17.5, $p<.01$). Morning cortisol was negatively correlated with usual fatigue (rho=−.22, $p=.05$) and activity interference (rho=−.35, $p<.01$), but positively correlated with vigor (rho=.31, $p<.01$). Cytokine levels were not significantly different between fatigue groups and exhibited weak, to no, correlations with fatigue measures.

Conclusions: These data support the hypothesis that hypothalamus-pituitary adrenal axis regulation may be a factor in cancer-related fatigue. Fatigue and vigor may have different physiologic profiles.

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RELIGIOUS INVOLVEMENT AND CANCER RISK, PREVENTION, AND SCREENING BEHAVIORS IN A NATIONAL SAMPLE OF AFRICAN AMERICANS

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Religious involvement is central to the lives of many African Americans, and is related to cancer risk, prevention, and screening behaviors as well. Religious involvement is generally thought to play a positive role in health through several proposed mediators, such as keeping a healthy lifestyle in accord with religious beliefs, positive affect, religious coping, self-esteem, self-efficacy, and lower depression. The purpose of the present study was to provide an empirical test of these mediators, testing a theoretical model. The study collected primary data on a national probability sample of African Americans (N=2,370). African Americans age 21 and older completed a 45-minute telephone interview and were mailed a $25 gift card for their participation. Structural equation modeling was used to determine whether the aforementioned factors played a mediational role between religious involvement (beliefs, behaviors) and a number of cancer risk (e.g., smoking, alcohol), prevention (e.g., fruit and vegetable consumption), and screening (e.g., breast, prostate, colorectal) behaviors. Several measurement and structural models are presented. Analyses suggest that promising mediators include keeping a healthy lifestyle in accord with religious beliefs, positive affect, religious coping, and self-esteem. Outcome behaviors in significant mediation models included fruit and vegetable consumption, alcohol consumption, and in some cases mammography utilization and smoking status. Study findings have potential applied value for community-based health communication interventions. This may include educational and/or screening programs delivered in faith-based settings, which emphasize particular mediators and capitalize upon their association with the target health behaviors.

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CANCER SURVIVORS' BARRIERS AND FACILITATORS OF EXERCISE: A QUESTIONNAIRE-SURVEY

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Aims: Investigate the barriers and facilitators of exercise among a mixed sample of cancer survivors and establish fatigue levels, quality of life (QoL) and physical activity status.

Methods: An anonymous, postal questionnaire-survey was conducted with a convenience sample of cancer survivors. Questionnaires were distributed to 975 members of a supportive care cancer charity.

Results: A 52.3% response rate (n=456) was achieved with 76.0% of respondents being female, with stage I (18.3%) or stage II (21.0%) breast cancer (64.4%). Almost two thirds were ≥3 years post-treatment, yet fatigue was experienced by 73.5% of respondents on a daily (57.2%) basis and 68.1% had never been given any advice on how to manage fatigue. The top ten barriers that interfered with exercise "often/very often" were mainly related to respondents' health and environmental factors. Similarly, exercise facilitators were those that addressed health and motivational issues. While the majority of respondents were interested in (50.2%) and felt able (52.5%) to exercise, only 11.3% were meeting the exercise frequency guidelines of moderate intensity exercise at least 5 times per week. In terms of QoL, respondents experienced the most difficulty with emotional, cognitive and social functioning and the symptoms of fatigue, insomnia and pain.

Conclusions: Although cancer survivors continue to experience problems with fatigue long after the completion of treatment, it is apparent that they are interested and feel able to participate in exercise. Exercise barriers were mainly health related or environmental issues, however the main barriers reported were those that could also be alleviated by exercise.

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ACUPUNCTURE AND SYMPTOM MANAGEMENT IN CANCER PATIENTS

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Objectives: Cancer patients experience treatment—and disease-related symptoms which contribute to high levels of psychological distress and poor quality-of-life. There is evidence that acupuncture is a safe and effective therapy that may reduce pain, nausea, depression, anxiety and neuropathy. We investigated the effectiveness of acupuncture in the management of symptoms and quality of life in cancer patients.
Methods: Prospectively collected quality of life data from 15 cancer patients treated with acupuncture at JGH from August to December 2010, was analyzed. Edmonton Symptom Assessment Scale (ESAS) was used to measure 13 different symptoms and 1 measure of well-being. Acupuncture (laser and/or dry needles) treatment was given 1–2 sessions/wk. ESAS was completed at baseline and end of treatment.
Results: 15 pts (8 M and 7 F), mean age 63 (range 45–85), received an average 11 sessions/pt (range 4–26). Eight pts had ECOG PS of 1; 5 pts had PS of 2; 2 pts had PS >2. Pts with clinically significant baseline scores (ESAS>4) were: pain 12/15, nervousness 7/15, depression 6/15, appetite 6/15, shortness of breath 5/15, nausea 4/15, sleepiness 2/12 and poor well-being 9/15. After acupuncture, pain significantly improved from 6.5 to 3.3 ($p=0.02$); nervousness from 3.9 to 1.9 ($p<0.03$), depression from 3.6 to 2.0 ($p=0.04$), and perceived well-being from 4.5 to 1.7 ($p=0.003$). Six advanced stage pts were not on narcotics at end of treatment.
Conclusion: Results suggest that acupuncture may be effective in reducing symptoms related to treatment or cancer itself and in promoting well-being in cancer patients.

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A RANDOMISED, DOUBLE-BLIND, PLACEBO CONTROLLED, MULTI-SITE STUDY OF SUBCUTANEOUS KETAMINE IN THE MANAGEMENT OF CANCER PAIN

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Objectives
Ketamine is used commonly as an adjunct to opioids in the management of pain. The evidence to support this practice is limited. The aim of this study was to evaluate the role of subcutaneous ketamine in cancer pain.
Methods
Patients with pain related to malignant disease or its treatment, rated as ≥3/10 despite adequate co-analgesia, were eligible if there has been no change in baseline opioid dose within the previous 48 hours. Participants were randomised to either ketamine or placebo, delivered subcutaneously at a dose titrated from 100 to 500 mg/24hours, according to response and toxicity. Response was defined as a ≥2 point reduction in average Brief Pain Inventory (BPI) pain score from baseline with ≤4 breakthrough doses of analgesia. The primary endpoint was average pain score at start day 6. Secondary endpoints included adverse events, response at days 2–5 and quality of life. Ketamine would be considered superior to placebo if the response rate at start day 6 was 25% greater than that of placebo (assuming a placebo response rate of 30%).
Results
One hundred and eighty five participants were randomised from March 2008 to February 2011 to complete the planned sample size of 150. Primary analysis has confirmed the high placebo response rate (26/92=28%) with no difference between active and placebo arms ($p=0.78$).
Conclusion
This adequately powered, randomized controlled trial demonstrates the power of placebo and does not support the role of subcutaneous ketamine in the treatment of cancer pain in advanced cancer.

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SOCIAL SUPPORT BUFFERS NEGATIVE LIFE EVENT STRESS AMONG CANCER SURVIVORS, BUT ONLY IF IT IS EFFECTIVE SUPPORT FROM A PARTNER

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Objectives: There is ample evidence that negative life events cause psychological distress, especially among people already coping with the stress of cancer diagnosis and treatment. Theoretically, enacted support should provide resources that "buffer" adverse effects of these events. Yet evidence for buffering effects of enacted support is weak. We propose that buffering is most likely if support is effective (i.e., a good match for recipients' needs in terms of its quality and quantity).
Methods: We tested this hypothesis in a cross-sectional study of 228 cancer survivors who underwent hematopoietic stem cell transplant 9-months to 3-years prior to assessment. This treatment entails lengthy recovery and high dependence on caregivers. Participants completed measures of generalized distress, recent negative life events, and effectiveness of caregiver support (the social support effectiveness [SSE] questionnaire). Survivors with partners (n=188) rated the effectiveness of partner support; unpartnered survivors (n=40) rated their primary caregiver's support (usually a relative or friend).
Results: Hierarchical multiple regression analyses revealed that a greater number of negative life events predicted higher distress (β=.20, p=.001), as did receiving less effective support (β=−.22, p<.001). A three-way interaction (β=−.26, p=.03) revealed that support buffered adverse effects of negative life events only if it was effective and only if it was provided by a partner (β=−.15, p=.02) rather than another caregiver (β=.12, p=.54).
Conclusions: These and other findings applying the SSE framework suggest new approaches for developing social support interventions for cancer survivors. We discuss theoretical contributions of this work and its implications for intervention development.

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NEURO-COGNITIVE IMPAIRMENT IN BREAST CANCER PATIENTS: PHARMACOLOGICAL CONSIDERATIONS

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Objective: Experimental studies have suggested that pharmacological factors may predict the occurrence and severity of cognitive impairment in breast cancer survivors. This review was designed to study the impact of pharmacological factors of chemotherapy on cognitive function in breast cancer survivors.
Method: Longitudinal studies, published before December 2010, which involved the administration of neuropsychological tests on breast cancer survivors were extracted from PubMed and Scopus with keywords: "chemotherapy," "cognitive function", "neuropsychological" and "breast cancer". Chemotherapy regimens that were received by subjects in the included studies were classified into types (first, second, third generation of regimens) and dose intensities (standard, high, low). Cognitive decline was classified as acute and late onset, defined by the occurrence of impairment within 3 months, and more than 3 months after completion of chemotherapy, respectively.
Result: Seventeen studies were eligible. Reported duration of impairment in the subjects varied across generations of chemotherapy regimens (1 week–18 months). Patients who received 5-flurouracil (5-FU)-based regimens (such as FEC/FAC) were more likely to suffer from cognitive decline, comparing to patients who received purely anthracycline-based regimens (such as AC/EC) (61% versus 33%). Three studies suggested that regimens containing taxanes can cause dose-dependent cognitive impairment that is associated with increased plasma level of inflammatory cytokines. Five studies also suggested that dose intensive chemotherapy regimens might exacerbate the duration of cognitive impairment.
Conclusion: Current knowledge suggests that chemotherapy regimens that involve multiple cytotoxic drugs such as taxanes and 5-FU, and are dose intensive, may possibly be determinants of cognitive decline in cancer patients.

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SEXUAL FUNCTION AND QUALITY OF LIFE AFTER EARLY BREAST CANCER: A PROSPECTIVE INVESTIGATION

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Objectives: We have previously reported on the natural history of cancer related fatigue (CRF) after adjuvant breast cancer therapy in a prospective cohort study (FOLCAN). This paper reports on sexual functioning (SF) and its relationship to quality of life (QOL) in this cohort.
Methods: Women were recruited after surgery but prior to commencing adjuvant treatment. Self-report questionnaires assessed SF, QOL, CRF, mood, menopausal symptoms and disability at baseline, completion of therapy, and at 6 and 12 months post-therapy.
Results: 92 of the 218 participants completed the SF measure (mean age 49.8 years). They were significantly

younger, more likely to be partnered and less likely to be post-menopausal than non-reporters. At baseline, 40% reported problems with sexual interest and 60% with physical sexual function. SF scores declined across all domains at end-treatment, then improved but remained below baseline at 12 months; with a significant temporal effect in the physical SF subscale (Wilks' λ 0.827, p=0.034) and a trend for overall satisfaction (λ 0.869, p=0.094). There were significant correlations between sexual dysfunction and QOL domains (physical and emotional health, social functioning and general health) at all timepoints. Overall sexual satisfaction at final treatment was an independent predictor of global QOL at 6 months (p=0.032), with mood disorder at final treatment (p=0.030) and hormonal therapy (p=0.010). At 12 months the only predictors of QOL were treatment related (hormonal therapy, p=0.021; chemotherapy, p=0.041).

Conclusions: Sexual dysfunction over the first 12 months after breast cancer therapy is a common problem and independently predicts QOL.

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STANDARDISING CLINICAL TRIALS OF CANCER PAIN MANAGEMENT IN PALLIATIVE CARE

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Objectives: Patients with advanced disease present unique challenges for clinical trial design. Participants have uncontrolled, progressive disease with multiple co-morbidities and concomitant medications. Recruitment is slow and attrition high. There is a high prevalence of "adverse events" at baseline from underlying disease. Standardisation of methodology is necessary for the conduct of future trials.

Methods: The Australian Palliative Care Clinical Studies Collaborative (PaCCSC) has completed a quality, multicentre, adequately powered, placebo-controlled double-blind RCT of ketamine for cancer pain, involving 186 participants. The protocol was developed by a team of experts in the field and refined over the course of the trial. This provides recommendations for future studies.

Results: RCTs are feasible in a palliative care (PC) population. A placebo arm is warranted if there is no standard care of proven benefit. Numerical rating scales are more acceptable than visual analogue scales. A reduction in ≥2 points from baseline is a clinically relevant endpoint. The proportion of participants achieving this should be used to measure effectiveness. Pain should be classified as nociceptive or neuropathic. Include a measure of co-morbidity. The Australian-modified Karnofsky performance scale is most appropriate for this population. Concomitant medications must be stable for 48 hours prior to, and throughout the study. Use of the PC subset of the EORTC QLQ-C30 minimises participant burden. Adverse events must be scored at baseline and on study.

Conclusion: The success of the PaCCSC study provides guidance for the conduct of future studies. Standardisation of methodology when researching pain enables meaningful comparisons between studies.

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AN EVALUATION ON THE NEUROPSYCHOLOGICAL TESTS USED IN THE ASSESSMENT OF COGNITIVE CHANGES IN BREAST CANCER PATIENTS

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Objectives: Appropriate choice of neuropsychological battery is essential to understand the onset, severity, duration and site of cognitive changes in post-chemotherapy breast cancer survivors. This literature review is designed to evaluate and provide recommendations for a suitable neuropsychological battery to incorporate in cognitive studies on breast cancer patients.

Methods: A literature search restricted to publications in English before December 2010 was performed using SCOPUS and PubMed with the following combination of keywords: "neuropsychological assessments", "breast cancer", "chemotherapy", "cognitive impairment". Only observational studies that performed cognitive assessments on non-metastatic breast cancer survivors were included. The neuropsychological assessments were grouped into objective (traditional batteries and screening tests), subjective (self-reporting questionnaires) or computerised, and further classified according to their duration of administration and approach employed by examiners.

Results: Of the 30 studies identified, memory (87%) and attention/concentration (77%) were the most commonly assessed domains. A majority (60%) employed the use of Wechsler Adult Intelligent Scale (an objective test), while only 47% incorporated subjective assessments, which were commonly used to determine perceived cognitive impairment. This might be explained by the lack of validation and correlation data of subjective assessments with objective tests. Computerised tests received low popularity (27%) despite its numerous advantages as suggested by authors of other reviews.

Conclusions: It is recommended that a customised, computerised battery with appropriate subtests would be ideal to assess separate domains of cognitive function, as it would encompass the advantages of both traditional and computerised administrations.

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AN EVALUATION OF THE VALIDITY OF MEASURING SALIVARY OXYCODONE CONCENTRATIONS FOR PHARMACOKINETIC STUDIES IN PALLIATIVE CARE PATIENTS

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Objectives: Little is known about the pharmacokinetics (PKs) of oxycodone in patients with cancer, especially those with organ failure and at extremes of age. There is reluctance to subject these patients to non-essential tests including repeated venipuncture. The possibility of using saliva sampling as a simple non invasive test to investigate opioid PKs was investigated.
Methods: Patients with cancer receiving oral sustained release oxycodone (Oxycontin®) at any dose were asked to provide saliva samples at the same time as blood samples. Samples were not taken within 6 hours of a dose of immediate release oxycodone. Demographic information including age, liver and renal function, concomitant medications and time since dose was taken concurrently. Plasma and saliva oxycodone and metabolite concentrations were measured using high performance liquid chromatography.
Results: 139 paired samples from 43 patients (median age 68, range 24–87) were analysed. The median number of samples per patient was 3 (range 0–16). The oxycontin® dose ranged from 5 mg to 300 mg bd. Of the patients questioned, most expressed a preference for saliva sampling unless they had central catheters that could be bled. A high concentration of both oxycodone and the major metabolite noroxycodone was detected in saliva. There was no correlation between salivary pH and concentration and poor correlation between both plasma and salivary oxycodone (R^2=0.4641) and noroxycodone (R^2=0.3891).
Conclusion: Saliva does not provide a valid substitute for plasma when measuring oxycodone levels. The high concentration of drug in saliva raises the possibility of an active transport mechanism.

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THE ROLE OF THE RESEARCH NURSE IN CANCER PAIN TRIALS

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Background: Patients with advanced cancer who agree to partake in trials present unique challenges. They are often of poor performance status with progressive disease, multiple co-morbidities and medications. Moreover, these patients are often anxious, distressed and facing their own mortality. Emotional and physical distress impacts greatly on QOL. The research nurse must look after the "whole person" as well as carrying out the tasks necessary for a clinical trial.
Methods: Over the last 2 years, we have recruited 145 patients into trials involving pain management. This rich experience has enabled us to develop guidelines for the role of the research nurse in the care of advanced cancer patients.
Results:
- the research nurse (RN) must:
- liaise with other health care professionals to ensure a team approach to patient care
- take time to ensure participant's understanding of the trial
- build a rapport with the participant and carer
- prioritise patient comfort and safety
- be prepared to help with daily cares
- keep interventions short as patient will tire easily
- keep follow up visits to a minimum
- use phone follow-up as much as possible but keep routine phone calls to a minimum as participants resent constant interruptions
- minimise QOL assessments
- utilise visual clues as an aide for rating pain eg smiley scales

Conclusion: When overseeing patients with advanced cancer who have agreed to partake in a trial of pain management, the role of the RN must incorporate routine nursing duties along with trial requirements in recognition of the participants' frail status and potential vulnerability.

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PREVENTIVE SKIN CARE AMONG CANCER SURVIVORS

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Aims: Research shows that physicians may neglect preventive care among cancer survivors (CS). Self-motivation in CS

towards preventive care is unknown. Using preventive skin care as a surrogate, we aimed to characterize preventive skin care practices in CS and identify factors associated with appropriate prevention.

Methods: Using data from the US HINTS survey, we examined preventive skin care practices among CS and non-cancer patients (NCP). Logistic regressions were used to examine these differences.

Results: We identified 179 early CS of <5 years, 242 intermediate CS of 5–10 years, 412 long-term CS of >10 years, and 5951 NCP: mean ages 61/63/69/53 years, 47/52/68/60% female, and 64/71/73/75% White respectively. Use of sunscreens (60%), long-sleeved shirts (88%), hats (58%), shades (68%) and tanning beds (6%) were suboptimal. CS were as likely to adhere to preventive strategies as NCP (Table). There were no significant differences among early, intermediate and long-term CS. Those who were young or female were more likely to use sunscreens while those who were elderly or male tended to use hats and shades.

Conclusions: A prior cancer diagnosis did not appear to increase compliance towards cancer prevention. Strategies that increase self-motivation may be needed.

[Table]

	Sunscreens (OR)	Long sleeved shirts (OR)	Hats (OR)	Shades (OR)	Tanning beds (OR)
NCP	1.00	1.00	1.00	1.00	1.00
CS of <5 years	1.29	1.27	0.69	0.67	0.20
CS of 5–10 years	1.11	0.81	0.98	0.91	0.62
CS of >10 years	1.18	1.24	0.84	0.79	0.84
P-value	0.64	0.70	0.59	0.52	0.50

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ALLIED HEALTH PROFESSIONALS PROVIDING REHABILITATION IN CANCER AND PALLIATIVE CARE: A REVIEW OF THE EVIDENCE

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Rehabilitation in cancer is an important component of care from diagnosis to end of life. This review refers to eight tumour sites- brain and cns; breast; colorectal; gynaecological; head and neck; lung; upper GI and urology for which rehabilitation interventions are available, depending on the level and expertise of the AHP. The review focused upon the effectiveness of interventions which form practice in dietetics, occupational therapy, physiotherapy, speech and language therapy and lymphoedema. Additionally, it reports on certain cancer related symptoms which can be ameliorated by the aforementioned AHPs and provides evidence in the two contexts of cancer site and intervention. Due to the heterogenicity of the studies—design, intervention type and outcome measures- it was not possible to quantitatively synthesise the results. Effective interventions range from physical activity; massage; nutritional advice, support and hydration; relaxation; lymphoedema therapy; shoulder function physiotherapy techniques; respiratory therapy; incontinence therapy; occupational therapy programmes and psychoeducation to voice and communication therapy, acupuncture and TENS therapy.

Though extensive, this review was not a systematic review, though its principles resonate with that of such a robust review. This review provides a useful synopsis of AHP practice and provides a forum to develop a research programme to ensure that future research not only fills the gaps but also is of the necessary quality to stand up to academic scrutiny and to be accepted as robust, well designed and relevant.

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REHABILITATION FOR PATIENTS WITH UPPER GASTROINTESTINAL OR GYNAECOLOGICAL CANCERS—THE PATIENT'S PERSPECTIVE

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Objectives: This study investigated patient's experiences of rehabilitation needs following treatment for gynaecological or upper gastrointestinal cancer.

Methods: Participants were recruited from consecutive outpatient clinics at a UK cancer centre to attend one of a series of focus groups. The groups were audio-recorded, transcribed verbatim and continued until data saturation was reached and confirmed (at five focus groups). Data were analysed using grounded theory and coded independently by two researchers.

Results: Thirty-three men and women who had completed treatment participated in five focus groups from July to October 2010. A core theme of "seeking a new normality" was underlying through the research. Four key themes emerged: Impact on the person, adjustment, external support and tailored individualised information. Participants reported a marked "drop-off" of professional support following treatment and explored how these factors assisted or hindered their recovery. It was apparent that the scope and benefit of rehabilitation services were poorly under-

stood by participants who had consequences of treatment that could be treated by rehabilitation therapies. This was particularly by those participants not on a surgical pathway. It was unclear to many participants where to get guidance and help after treatment ended. Gynaecological cancer patients accessed fewer rehabilitation services and experienced more psychosocial impact than those with upper gastrointestinal cancers.

Conclusions: Patients felt they lacked individual support to rehabilitate, to find and fulfil their potential after the end of treatment. These results will inform a future intervention study exploring the provision of individualised guidance at the end of treatment.

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IMPACT OF TIME WITHOUT CHEMOTHERAPY BEFORE DEATH IN END OF LIFE CARE

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Introduction: Integrated palliative care is now developed in french cancer centers. Palliative care's goals are to obtain a good quality of life (such as symptoms control, psychosocial support.) and an adequat end of life project. For the latter, end of chemotherapy is helpful, as highly significant of a risk of death. The aim of our study is to analyze the influence of period of time preceding death, without using chemotherapy.

Methods: Admitted patients in palliative care day hospital were distributed in three groups, according of time without chemotherapy before death: G1: >97 days before death; G2: between 97 and 33 days; G3: <33 days.

Results: 138 patients were included in 2007; 104 women; mean age 62 years; mainly metastatic breast cancer; each group have 46 patients

Place of death was:

- hospital; G1: 15 (32%), G2: 16 (35%), G3: 25 (54%)
- home; G1: 10(22%), G2: 14(30%), G3: 11(24%)
- palliative care unit; G1: 21 (46%), G2: 16 (35%), G3: 10 (22%)

Emergency consultations in the last three months; G1: 17 (37%), G2: 14 (30%), G3: 23 (50%)

Discussion: Belated ending of chemotherapy (<30 d) is often associated with inappropriate care (place of death in intensive care unit and amount of emergency consultations). Time without chemotherapy should be considered as a major indicator for high quality palliative care. But nevertheless the way of breaking such bad news remains a major challenge in palliative care.

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EXPLORATORY STUDY ON THE SUBJECTIVE EXPERIENCE OF YOUNG WOMEN WITH NON-METASTATIC BREAST CANCER AND OF THEIR PARTNER DURING HORMONE THERAPY

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Objectives: The purpose of this study is to explore the experience of young female patients receiving hormone therapy for a non-metastatic breast cancer as well as the experience of their partner. If the psychosocial consequences of the announcement itself, of chemotherapy and of surgery are well-known, the impact of hormone therapy is less documented. This field of study is all the more important since younger women and their partner present specific issues (desire to have children, sexuality, professional life, etc.).

Methods: 11 female patients, under hormone therapy, having been treated for breast cancer before the age of 45, and their 11 respective partners gave their consent for an individual non-directive interview. The recordings were analysed according to the IPA method (interpretative phenomenological analysis) following a dyadic and phenomenological procedure.

Results: The analyses reveal 5 themes: the ways in which the couple is drawn together by the shared experience of the disease, the progressive emergence of peculiar experiences, the paradoxical feeling of loneliness associated with the support of the friends and family, the reconstruction of values brought about by the disease, and finally the ways in which they contemplate the future.

Conclusions: These themes make it possible to outline the adaptation strategies of the female patient, of the partner and of the couple during hormone therapy. It would be interesting to identify the strategies at other steps and to consider pursuing adaptive paths during the disease as a whole in order to match care to needs.

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ASSOCIATION BETWEEN A VALIDATED SYMPTOM ASSESSMENT TOOL AND NURSE CLINICAL IMPRESSION IN CANCER PATIENTS ADMITTED TO A PALLIATIVE CARE UNIT

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Advanced cancer inpatients develop multiple symptoms. Effective treatment is possible if appropriate assessments

took place. Most clinicians do not use symptoms assessment tools in everyday practice. In this prospective study, we compared the patient reported symptom battery by the Edmonton Symptom Assessment System (ESAS) to bedside nurses' clinical impression.

Methods: Consecutive advanced cancer inpatients admitted to our Acute Palliative Care Unit from April to July 2010 were included. We collected the results from ESAS on the day of admission (D1) and on the third day of hospitalization (D3). We also collected the nurses' clinical impression of patient's physical and emotional distress on D1 and D3 (none = 0, severe = 3).

Results: 118 patients completed the ESAS on day 1 and 116 on day 3. For D1, there was no significant association between nurses' perception of symptoms burden and ESAS assessment. The median ESAS physical and psychosocial scores were 31 and 12 in patients with nurse clinical impression of low or no physical distress, versus 34 ($p=0.07$) and 15 ($p=0.18$) in patients with nurse clinical impression of moderate or severe distress, respectively. For D3, we found a significant association only for pain ($r=0.31$, $p=0.001$) and anxiety ($r=0.29$, $p=0.001$). On D1, the nurses' assessment had low sensitivity as compared to ESAS ranging from 0.56 to 0.69, without significant improvement on day 3.

Conclusions: The clinical impression of trained palliative care nurses had no significant association with patient reported ESAS scores. Validated tools are needed for daily clinical assessment of advanced cancer patients.

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ZOLEDRONIC ACID (ZA) FOR PREVENTING SKELETAL RELATED EVENTS (SRES) IN MULTIPLE MYELOMA (MM): EVALUATION IN A REAL WORLD SETTING

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Background: ZA is indicated for the prevention of SREs in MM patients with lytic bone disease. In this analysis, our entire ZA patient experience from 1/1/2007 to 12/31/2009 was assessed for safety, efficacy, health care resource use and compliance to national guidelines.

Methods: 253 MM patients with lytic disease were identified and reviewed for appropriate ZA compliance, safety and efficacy. SRE related outcomes included emergency room (ER) visits, hospital admissions and home care support. Overall survival (OS) from the first dose of ZA was determined using the method of *Kaplan-Meier*.

Results: 225 of the 253 MM patients (89%) with lytic disease received ZA as recommended by national guidelines. The 225 patients received a median of 9 ZA doses (range 1 to 32) over the two year period. As of 5/31/2010, ZA was discontinued in 96 patients (42.7%). The main reasons being non-drug related. Discontinuations due to renal toxicity and osteonecrosis of the jaw occurred in only 5.3% and 1.3% of patients respectively. Overall, there were 74 SREs (32.9%) with radiation to bone (n=52), pathologic fractures (n=10) and cord compressions (n=6) being the most common. However, only 2.2% and 4.4% of patients required an ER visit or a hospital admission because of an SRE. Median OS for the 225 patients from the first ZA dose was 3.2 years.

Conclusions: ZA in MM patients appears to be well tolerated and efficacy is consistent with trial reports. Furthermore, almost 90% of patients within our practices received ZA in compliance with national guidelines.

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DEVELOPMENT AND IMPACT OF STOMA NURSING EDUCATION ON QUALITY OF LIFE OF PATIENTS WITH ADVANCED COLORECTAL CANCER

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Objective: Colorectal cancers are among the top 5 cancers in Kenya. Most patients present with advanced stage 4 disease necessitating palliative colostomies. Colon cancer in this region is predominantly seen in the 30–50 year old age group. There is no established stoma nursing in Kenya. Nurses lack the skills and knowledge required to handle these cases. The situation is compounded by lack of stoma products.

The objectives were twofold:

1. Outline the process of establishing stoma nursing in Kenya, the issues, and challenges.
2. Discuss the impact of stoma nursing education on the quality of life of patients with advanced colorectal cancers

Method: World Council of Enterostomal therapists(WCET) was approached to partner in developing an introductory stoma course. 28 nurses from around Kenya participated. The course content was developed by host and the visiting faculty. A referral process for patients with colorectal cancer was designed, piloted and implemented in two major hospitals resulting in formation of a colorectal cancer survivors network.

Results: A quality of life(QOL) questionnaire is in use.The support network meets regularly. This positively impacts quality of life of newly diagnosed patients.A long term education program in collaboration with WCET is planned. Ostomates have been equipped with skills to enable them teach others in the community.

Conclusion: The program has highlighted major QOL issues faced by colorectal cancer survivors.It has pointed out deficiencies in the system especially lack of skilled nurses. Stoma nursing education positively impacts the quality of life of colorectal cancer survivors with colostomies.

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ADAPTIVE RANDOMIZED STUDY OF PALONOSETRON ADMINISTERED AS 1 DOSE VERSUS 3 DOSES IN PATIENTS RECEIVING MULTI-DAY CHEMOTHERAPY

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Background: Patients (pts) receiving multi-day chemotherapy (CT) are at high risk for CT-induced nausea/vomiting (CINV). Palonosetron (Palo), longer-acting 5-HT3 receptor-antagonist (RA), with dexamethasone (Dex) may provide benefit due to less frequent-dosing. However, the optimal schedule is unknown. This study evaluated efficacy of 1-dose vs 3-dose Palo with Dex in pts receiving highly-emetogenic (HEC) regimen of doxorubicin (Dox) and ifosfamide (days 1–5).
Methods: In this adaptive-randomization study, sarcoma pts were randomized to Palo (0.25 mg) 1-dose administered on day-1(Arm-A) vs 3-dose (Arm-B) on days 1,3,5. All pts received Dex (12 mg day-1, 8 mg days 2–5). In pts with no complete response [CR (no V, no rescue medicines)], Aprepitant, NK-1 RA (125 mg day-1, 80 mg days 2,3) was added in subsequent cycles. Dox was administered by iv bolus (n=23) or continuous infusion (CI, n=27).
Results: For the 50 evaluable pts (29 males), the median age was 50 years; 16 randomized to Arm-A and 34 to Arm-B. CR was observed in 31% (5/16 pts) in Arm-A vs 50% (17/34 pts) in Arm-B. None of the pts receiving CI Dox on Arm-1 (0/6) responded as compared to 43% (9/21) on Arm-B (p=0.07). The probability of declaring response rate of Arm-B better than Arm-A was 91%. Addition of Aprepitant to subsequent cycles (n=50) in non-responding pts resulted in CR in 42% of the cycles (bolus:22% and CI:63%, p=0.03).
Conclusions: In pts receiving multi-day HEC, Palo 3-dose had better response than 1-dose; particularly in pts receiving Dox by CI; addition of aprepitant improved response.

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ANEMIA AND TYROSINE KINASE INHIBITION: A STUDY OF PATIENTS WITH GASTROINTESTINAL STROMAL TUMOR TREATED WITH IMATINIB PREOPERATIVELY AND POSTOPERATIVELY

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Objectives: Through specific inhibition of the tyrosine kinase KIT, imatinib has revolutionized the prognosis of patients with Gastrointestinal Stromal Tumor (GIST). However, fatigue is the most common dose-limiting side-effect in patients treated with imatinib. In the metastatic setting, anemia has been reported in 90% of patients on imatinib. While the etiology is unclear, contributing factors may include gastrointestinal resection and chronic blood loss, with resulting deficiencies in iron, vitamin B-12, or folate, or hematopoietic suppression secondary to KIT-inhibition. We sought to investigate the incidence of anemia in the adjuvant setting, and identify associated factors for further study.
Methods: With IRB-approval, we reviewed data on 22 patients with GIST who underwent preoperative imatinib (3–7 days), surgery, and postoperative imatinib (600 mg daily).
Results: Before imatinib or surgery, 41% (9/22 patients) presented with anemia (6/9 grade I; 3/9 grade II). Postoperatively, 95% (21/22 patients) experienced anemia (18/21 grade I). During imatinib treatment [median duration11.4 months (Range 3.5-23.5)], 95% (21/22 patients) continued to be anemic (All grade I/II); 50% with a decline in Hgb >2 g/dL from baseline. After imatinib discontinuation, most patients (16/22) normalized Hgb values. Interestingly, red cell mean corpuscular volume (MCV) increased significantly (from mean 84 to 94 fl, p< 0.0001) and platelet counts decreased significantly (from mean 329,000/mm^3 to 251,000/mm^3, p<0.0001) during imatinib treatment.
Conclusions: While imatinib is generally well-tolerated, mild-to-moderate anemia, MCV increases, and thrombocytopenia are common laboratory findings in patients receiving imatinib post-operatively. Ongoing research will elucidate the etiology of anemia to improve supportive care and optimize therapeutic efficacy.

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THE HESKETH ALGORITHM REVISITED: EMETOGENICITY AFTER TREATMENT WITH MULTI-DAY CHEMOTHERAPY AND THE ANTIEMETIC GRANISETRON TRANSDERMAL SYSTEM

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Objectives: Hesketh scores define emetogenicity of single- and multi-agent single-day chemotherapy. This analysis determined emetogenicity of multi-agent, multi-day chemotherapy and Granisetron Transdermal System (Sancuso®).

Methods: This was a retrospective analysis of data from 393 patients in a phase III trial of GTDS vs oral granisetron who received 3 days of moderately or highly emetogenic chemotherapy, regardless of granisetron formulation. Emetogenicity was determined: (1) per day using the Hesketh algorithm for multiple agents, then the maximum daily value for the multi-day regimen; (2) maximum emetogenicity of all agents in the multi-day regimen. Emesis was the percentage of patients who had vomiting/retching or rescue medication.

Results: Overall Hesketh score on day 1 (both methods) and Hesketh scores of the first ($P \leq .02$) and second ($P \leq .04$) most emetogenic agents were emesis predictors. The best binary emesis predictor was day 1 Hesketh score ≤5. Patients with day 1 Hesketh score 5 had the highest rate of emesis, 62.5%, vs 31.7% for patients with a score <5. For 369 patients with day 1 Hesketh score <5, distribution of scores was similar, regardless of the number of drugs.

		Maximum Hesketh Score (Day 1) n (%)		
	n	2	3	4
1 chemotherapy drug on day 1	28	1 (4)	7 (25)	20 (71)
>1 chemotherapy drug on day 1	341	0 (0)	75 (22)	266 (78)

Conclusions: Hesketh scores for emetogenicity of individual agents are applicable for multi-day, multi-agent regimens in patients receiving antiemetics.

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MAKING SENSE OF POST-TREATMENT SURVEILLANCE IN HEAD AND NECK CANCER: WHEN AND WHAT OF FOLLOW-UP

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Follow-up in patients treated for head and neck cancer (HNC) is aimed at early detection of recurrence, metastases and second primary tumours. Various modalities for the routine follow-up of patients with HNC have been proposed and studied in the literature. Consequently, practising head and neck surgeons and oncologists all over the world use different guidelines and protocols to follow-up their patients. These guidelines involve follow-up intervals of varying intensity and schedule an assortment of investigations that may be neither logical nor practical. This follow-up process may be difficult to administrate, cause unnecessary discomfort and morbidity to the patient and can have serious cost-implications to the healthcare system. This review summarises strategies for follow-up, imaging modalities and key investigations in the literature published between 1980 and 2010. In this structured review, we have assessed studies in the literature that have addressed follow-up intervals, imaging tests, tumour markers, endoscopy and thyroid function tests as a part of the routine post-treatment surveillance in HNC patients. Studies analysing the cost benefit of such surveillance have also been addressed. Based on the evidence presented, we have compiled definitive recommendations for effective surveillance/post-treatment follow-up in patients with HNC. Sucessfully we started compiled definative line of management in our institute with significantly positive feedback with reference to survivorship of the patients.

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UNSCHEDULED PRESENTATIONS OF CANCER OUTPATIENTS: A RISK FACTOR ANALYSIS FOR HOSPITALIZATION

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Objective: A growing number of cancer outpatients ask for unplanned visits. Aim of this analysis was to describe the nature and magnitude of this phenomenon and to identify risk factors for hospitalization among cancer patients who accessed a dedicated ward, open daily from 8 am to 6 pm on business days.

Methods: A total of 2,811 consultations regarding 1,431 cancer patients who accessed the ward from October 2006 to September 2008 were reviewed. Data regarding tumor type, patients' age/demographics, and reasons for visiting were all recorded. Considering hospitalization as the dependent variable, non conditional logistic regression uni- and multivariate models were used to identify risk factors. Analyses were performed using SAS 9.1.

Results: 51% of the patients presented with multiple symptoms and 31.5% had received chemotherapy within 15 days before the unplanned consultation. Pain (30.8%), gastrointestinal disturbances including nausea/vomiting or diarrhea (25.9%), fatigue (23%), dyspnea (16.7%), and fever (13.8%) were the most frequent reasons for visiting. Overall, the hospitalization rate was 7.4%. Age-adjusted models of multivariate logistic regression demonstrated that presenting with multiple symptoms or with specific disturbances were significant risk factors for hospitalization (see table). Also, closeness to town (residence within 10 km) was a predictor for hospitalization (HR 1.73, 95% CI 1.12-2.63, p=0.01).

	HR (95% CI)	p
Symptoms at presentation		
1	1	–
2	1.78 (1.2–2.7)	0.007
3 or more	2.95 (1.8–5.1)	<0.0001
Main reason for unscheduled visit		
Gastrointestinal symptoms/cachexia	1.79 (1.2–2.6)	<0.002
Cardiovascular symptoms	1.78 (1.1–2.7)	<0.001
Hematological toxicity	1.58 (1.1–2.4)	<0.05
Fever or neutropenic fever	1.38 (1–1.9)	0.057

[HR for hospital admission following unplanned visi]

Conclusions: The increasing number of unplanned visits of cancer outpatients should be managed to avoid inappropriate selection for hospital admissions and interferences with the regular planning. Number and type of symptoms at presentation along with distance from the cancer center are simple predictors for hospitalization.

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RESPONSE RATE TO OUTPATIENT PALLIATIVE CARE IN PATIENTS(PTS) WITH CANCER PAIN

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Background: Pain is the main symptom in advanced cancer.The primary aim of this study is to determine frequency and predictors of pain response to state of the art palliative care.

Methods: Consecutive pts with advanced cancer with cancer pain presenting in the Supportive care clinic with complete ESAS at initial and subsequent visit were reviewed.All pts received interdisciplinary care led by palliative care specialists (IDT) following common care pathways. A logistic regression model to determine if baseline demographics, cancer type, ESAS, Memorial Delirium assessment scale, and CAGE, were associated with response (defined as ≥2 point's reduction in pain for pain or ≥30%, JT Farrar's criteria).

Results: 1614 pts (median age 60;male/female ratio 1.1) were included. Median time between initial and follow-up visit 15 days.The mean (SD), median baseline pain 5.3(2.9) and 6.0. Overall 48%(783/1614) of patients had response**;** however only 35%(572/1614), pain reduced to mild pain(≤3/10). Table 1 provides the detailed response rates.Factors associated with response to pain were baseline pain (OR per pt, 1.4; p<0.01), fatigue (OR per pt,1.01, p=0.014), ESAS symptom burden (OR per pt,1.01; p=0.039).

Conclusions: Current response criteria underestimates patients on moderate to severe pain. 31% of patients with mild pain at baseline will develop moderate to severe pain on followup. More frequent followup visits by IDT is required.

Baseline Pain Intensity	Responders with mild pain (≤3/10) at follow-up visit	Patients with moderate to severe pain(≥4/10) at follow-up visit
Patients with mild pain (0–3)	181(39%)	**144(31%)**
Patients with moderate pain(4–5)	107(32%)	177(52%)
Patients with severe Pain (6–10)	**284(35%)**	528(65%)

[Table 1. Response rates for cancer pain]

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CARDIAC SAFETY OF A GRANISETRON TRANSDERMAL SYSTEM IN THE TREATMENT OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING

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Objectives: 5-HT_3 antagonists may have cardiac effects, as shown by withdrawal of IV dolesetron for treatment of chemotherapy-induced nausea and vomiting (CINV) in the US. The 5-HT_3 antagonist granisetron is the active agent in the Granisetron Transdermal System (GTDS, Sancuso®), approved in the US for CINV prevention in patients receiving ≤5 days of moderately or highly emetogenic (MEC, HEC) chemotherapy. GTDS is applied 24–48 hours before chemotherapy and left in place for ≤7 days. Cardiac safety of GTDS was investigated in a phase III clinical trial and a phase I cardiac safety study.

Methods: In a randomized, double-blind, phase III trial of GTDS, patients receiving multi-day MEC or HEC had ECGs at baseline, start of chemotherapy (at the estimated granisetron maximum plasma concentration), and 120 hours post treatment. In a blinded placebo-controlled phase I study of GTDS in healthy subjects, the primary end point was time-matched, placebo-corrected change from baseline in QTc (Fridericia correction; ddQTcF).

Results: In the phase III trial, there were no clinically relevant changes in repolarization intervals, ECG

morphology, or heart rate in the GTDS group (n=273). In the phase I QTc study, there was a maximum ddQTcF in the GTDS group (n=60) of 1.9 ms on day 3 and 2.5 ms on day 5.

Conclusions: In a phase III trial in patients receiving chemotherapy and GTDS, no cardiac safety issues emerged, and in a phase I QTc study of GTDS in healthy subjects, there was no significant QTc prolongation at standard regulatory and clinical thresholds.

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AN INTESTINAL BARRIER IN CHILDREN WITH CANCER

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Objectives: After chemotherapy, it is often damage observed of the intestinal mucosal barrier and an increase of reactive oxygen species. The aim of this study was the measurement of intestinal permeability in children after finishing chemotherapy for solid tumours.

Methods: 19 paediatric patients with cancer (12 males, 7 females, aged from 2 to 20 years, mean age 10.5 years), who were diagnosed and treated in the Department of Paediatrics, Haematology, Oncology and Endocrinology, Medical University of Gdansk, Poland, in the period from 2008 to 2009 were enrolled in the study. They had no gastrointestinal symptoms, infections and nephropathy. Intestinal permeability was assessed by measurement of urinary lactulose and mannitol after oral challenge by the enzymatic analyses.

Results: There was statistical significance in lactulose and mannitol urine excretion compared to the controls ($p=0.0088$ for lactulose and $p=0.0014$ for mannitol). Cancer patients, who received chemotherapy, excreted less mannitol (mean 5.50%) than the controls (mean 10.7%). Excretion of lactulose in the oncological group increased (mean 1.26%) compared with the control (mean 0.360%). The ratio of lactulose to mannitol, which is an estimation of intestinal wall permeability, was significantly higher in children with cancer (mean 0.188) than for the controls (mean 0.0453) ($p=0.0006$).

Conclusions: Our data suggests that intestinal barrier is damaged in paediatric cancer patients after chemotherapy. These observations seem to be useful in clinical practice to establish the proper diet, correct timing of drug administration and at the same time it allows to apply the chemotherapy according to protocols without delay.

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NOVEL CANCER THERAPY AND PATIENT'S QUALITY OF LIFE: CAMOUFLAGE MAKEUP FOR UNSIGHTLY SKIN REACTIONS CAUSED BY CANCER VACCINE THERAPY

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Objectives: Many types of novel cancer treatments have been attempted. Cancer vaccine therapy is thought to be one of the most promising therapies and has very few systemic adverse events. However, it causes adverse skin reactions such as unsightly scars with redness, blisters, and ulcerations at the injection site. These adverse reactions remain to be an inevitable component of vaccine therapy. We interviewed advanced cancer patients receiving vaccine therapy to determine whether they accepted these skin reactions. Their responses were as follows:

"*I don't care, living is much important. But in fact, I feel like being watched"*

"I wouldn't like to go swimming with such unsightly scar. I'd like to cover them"

Thus, we examined whether makeup improved the quality of life (QOL) of cancer patients with unsightly vaccine scars.

Methods: Special camouflage makeup was applied at the injection site of 14 patients. The QOL survey was performed before and 2 months after using the makeup. We used "skin camouflage technique" introduced by British Red Cross. The foundation cream was modified to suit the requirement of the Japanese people.

Results: Almost all patients, especially women, were satisfied with this skin camouflage technique. However, some complained about sustainability and water resistance. Japanese people enjoy bathing in hot springs, and patients would prefer to go without skin scars. Thus, currently, we are developing new waterproof material, especially for patients undergoing vaccine therapy.

Conclusion: Novel therapy should be developed to improve the therapeutic efficacy and the quality of life of patients.

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INTERLEUKIN 1, IL-8, IL-10, TUMOR NECROSIS FACTOR BETA AND SYMPTOM BURDEN IN LUNG CANCER PATIENTS

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Objectives: Advances in molecular epidemiology and statistical genetics can be used to explore the role of genetic variation in modulating the risk for severe and persistent symptoms in patients with cancer. There is compelling evidence that cytokines play an important role in the pathogenesis of cancer-related pain, depressed mood and fatigue—the most prevalent and debilitating symptoms reported by cancer patients.
Aims and methods: We used a tree-based multivariate approach to assess if variants in 37 inflammation genes may serve as biologic markers of risk for high symptom burden (e.g., severe pain, depressed mood and fatigue) in 599 white Caucasian patients with previously untreated non-small cell lung cancer. Demographic, clinical and symptom data were collected prior to cancer treatment. Pain, fatigue and depressed mood were assessed using validated scales.
Results: We found that stage of disease, sex, and hypertension were the non-genetic markers of risk for high symptom burden. Single nucleotide polymorphisms in 4 genes (Interleukin 8, Tumor necrosis factor-alpha, IL-1, and IL-10) significantly predicted high symptom burden. Among those with advanced stage, IL-8T251-A and TNF-B-Arg13Cys were markers for high symptom burden. Among those with early stage of disease, males who were carriers of IL-1C-889T CC genotypes had increased risk for symptom burden. Among females, IL10RBLys47Glu was a significant marker for high symptom burden.
Conclusions: In this preliminary analysis, we document potential genetic markers of risk for high symptom burden in lung cancer patients. Identifying patients at high risk for symptom burden will help facilitate early symptom management.

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PREGABALIN FOR NEUROPATHIC CANCER PAIN: A RANDOMIZED CONTROLLED TRIAL

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Objective: Approximately 15–20% of patients with cancer develop a neurological complication. Treatment often requires adjuvant analgesics to complement the effects of opioids. This study aimed to determine the analgesic effect of the addition of pregabalin to opioids in the management of neuropathic cancer pain.
Methods: One hundred twenty consecutive patients (60 pts in each group) with neuropathic pain due to cancer, partially controlled with systemic opioids, participated in a randomized, double-blind, placebo-controlled, 14-day trial from Jan 2008 to Jan 2010. Pregabalin was titrated from 150 mg/d to 600 mg/d in addition to stable opioid dose. Extra immediate-release oral morphine doses were available as needed. The average pain score (0 to 10 numerical scale) over the whole follow-up period was used as main outcome measure. The primary efficacy endpoint was Pain Intensity Difference (PID). Secondary outcome measures were: intensity of burning pain, shooting/lancinating pain, dysesthesias and daily extra doses of opiod analgesics.
Results: Overall, 46 (76.7%) patients received pregabalin and 41 (68.3%) patients received placebo completed the study. Analysis of covariance (ANCOVA) on the intent-to-treat population showed a significant difference of PID between pregabalin (1.6±0.4) and placebo group (0.5±0.3, P=.015). Dysesthesia score showed a statistically significant difference (P=.005). Reasons for withdrawing patients from the trial were adverse events in four patients receiving pregabalin and in two patients receiving placebo.
Conclusion: These data suggest that pregabalin added to an opioid provides better relief of neuropathic pain in cancer patients than opioid monotherapy.

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IS THERE AN INCREASE RISK OF CANCER, REPRODUCTION COMPLICATIONS AND TOXIC EVENTS IN WORKERS EXPOSED TO ANTINEOPLASTIC AGENTS?

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Introduction: The use of the chemotherapy has an important role in the treatment of the cancer. The antineoplastic agents (cytotoxics or cytostatics) interfere the growth and development of the harmful cells and neoplasias, interrupting at the same time the cell growth. It does that by it they be carcinogenic, mutagenic and/or teratogenic. By the way, these agents are considered dangerous substances for the workers of the area of the health that manipulate them.
Objective: Review of the literature to determine if the risk of cancer, reproductive complications and toxic events are increased, in workers of the health exposed to antineoplastic medicines.
Methods: A search of the literature of studies published describes an extensive variety of epidemiological designs to evaluate toxic events in workers of the health exposed to antineoplastic agents.
Results: Several studies to evaluate toxic events in personnel exposed to cytostatic have been published to the date, and the majority of these they have shown significant associations for reduce the fertility, to develop

negative neonatal outcomes (premature delivery and low birth weight) and to carry out miscarriages in women exposed to these medicines.

Conclusions: The results of this review show that the occupational exposure of female personnel to antineoplastic medicines it associates with an increment of the risk to develop reproductive complications. It is important that the makers of politics take decisions and they carry out supervision for that the oncological centers take measures of control to reduce the potential risk of the workers exposed to these medicines.

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PROSPECTIVE STUDY TO EVALUATE QUALITY OF LIFE AND IMPROVEMENT IN SPEECH WITH AND WITHOUT MAXILLARY PROSTHESIS IN PATIENTS WITH MAXILECTOMY

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Aims and objectives: To assess quality of life and functions mainly speech of patients after prosthetic intervention at various stages after maxillectomy.

Materials and methods: The study is planned to be carried out in four phases.

Preoperative phase: Preoperative diagnostic models were obtained by taking the impression of the maxillary arch.

Immediate post surgical phase: (0 or 5th day post operative) A surgical plate/immediate surgical obturator was fabricated on preoperative cast.

Interim phase: - (12–15 post operative day) Impression of the resected maxilla was taken and an interim prosthesis was prepared from post operative cast.

Definitive phase: (6 weeks in non-irradiated patients, 6 months after completion of radiation in irradiated patients). Definitive obturator was prepared after the tissue have healed and matured enough to withstand prosthetic intervention.

Quality of life for each patient was assessed by using the quality-of-life core questionnaire EORTC QLQ-C30 and the head and neck module EORTC QLQ-H & N 35 of the European Organization for the Research and Treatment of Cancer at all four phases.

Speech evaluation: - Speech was evaluated at different phases of study by speech therapist. Patient's speech was assessed with the help of Dr. Speech Software Version 4 with and without obturator all the stages. This study was sanctioned by HSRC and HEC (Tata Memorial Hospital, Mumbai) on 17th Aug 2010.This study was started in August 2010. The sample size was determined as 30.

Results: Ongoing study, results of first ten patients will be discussed in this poster.

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SELF-EXPANDABLE METALLIC STENT PLACEMENT FOR THE PATIENTS WITH MALIGNANT GASTRODUODENAL AND COLORECTAL OBSTRUCTIONS; PALLIATIVE ROLE AND A BRIDGE TO CHEMOTHERAPY

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Background and aim: Self-expandable metallic stent (SEMS) placement has been described as a useful palliative method for malignant gastrointestinal obstruction. Recently, through-the-scope (TTS) system was developed and it contributes to this palliative intervention. On the other hand, chemotherapy against gastrointestinal cancers has greatly advanced. Here, we investigate an improvement of oral intake after SEMS placement, and also contribution of feasibility to chemotherapy and prolongation of survival period.

Patients and methods: One hundred and four patients of malignant gastroduodenal obstruction and 19 colorectal obstructions treated with SEMS placement from February 1998 to January 2011 were enrolled to our study. Ultraflex™ esophageal stent (Boston Scientific, USA) was placed by over-the-wire technique and Niti-S™ (Taewoong Medical, Korea) and WallFlex™ (Boston scientific, USA) gastroduodenal stent were delivered by TTS method.

Result: After stent placement, gastric outlet obstruction scoring system (GOOSS) was significantly improved both gastric and pancreatobiliary cancer (0.17 ± 0.06 vs 2.53 ± 0.12, 0.13 ± 0.18 vs 2.31 ± 0.24, $p=0.001$). Perforation and migration rate were 2.1% and 5.8% in gastroduodenal obstructions, 16.7% and16.7% in colorectal malignancies. Survival period after SEMS placement with chemotherapy was significantly improved in pancreatobiliary cancer patients ($p=0.006$).

Conclusion: Oral intakes after SEMS placement were improved in both upper and lower gastrointestinal obstructions, and it revealed SEMS as an effective palliative treatment. In addition to a palliative role, SEMS placement enables to start or continue chemotherapy for the patients with gastric outlet obstructions as a bridge to chemotherapy and it contribute to both palliation and prognosis in patients with pancreatic and biliary caner.

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TRACHEOTOMY TUBES MANAGEMENT AND THERAPEUTIC EDUCATION: A SAFE WAY TO RETURN HOME

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Objective: In our Head and Neck Surgery Unit, indications of hypopharyngeal and laryngeal partial surgery are pushed to their limits, with a tracheotomy to avoid asphyxia. Part of these patients has a complementary treatment by external radiotherapy and tracheotomy is often left in place during the irradiation in order to prevent a post-radiation laryngeal edema.
Aim: To present the education program of the patients with a tracheotomy for their return to home and to evaluate their safety.
Methods: The files of the patients operated on between 2008 and 2010 by partial surgery for laryngeal or hypopharyngeal carcinoma with a tracheotomy and returned home with their tracheotomy were retrospectively selected. The education of the patients is begun during the hospitalization by the nurses then continued at home by outpatient health care service providers with a regular medical follow-up in our unit. The number of complications and non-foreseen hospitalizations were collected.
Results: One hundred and forty three patients were selected. Thirty seven patients (26%) presented complications (19 bronchial infections, five with tracheitis, seven granuloma around the tracheotomy) of which 11 (8%) had to be re-hospitalized at least once and 26 treated as outpatients (17%). No patient is deceased from complications of his tracheotomy.
Conclusions: When managed with an adequate therapeutic education, a regular follow-up at home and in hospital and a medical availability in the event of acute problem, the return to home with a tracheotomy is without danger to the patient.

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A NOVEL APPROACH TO MANAGE SKIN TOXICITY CAUSED BY MONOCLONAL ANTIBODIES TARGETING EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR)

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Background: Inhibition of EGFR represents one of the most important fields for research and development in cancer therapy.Skin rash has been documented as one of the most common adverse reactions in patients receiving EGFR inhibitors.Several approaches have been attempted to manage skin toxicity.
Nicotinamide has been shown to be an effective treatment for skin inflammation in various conditions, since nicotinamide inhibits IL-8 production through the NF-kB and MAPK pathways in an in vitro keratinocytes/P. acnes model of inflammation.Furthermore green tea polyphenols could be useful in attenuation of solar UVB light-induced oxidative stress-mediated and MAPK-caused skin disorders in humans.
Methods: Therapy protocol for skin toxicity consisted of: topic applications of green tea and a mostouizer and orally given nicotinamide.Patients underwent a skin biopsy at first presentation of skin toxicity and were monitored weekly and data regarding skin toxicity (NCI-CTC grade, the Dermatology Life Quality Index (DLQI), a global score evaluating all the parameters) were recorded.
Results: Between September 2009 and September 2010, 13 colorectal cancer patients receiving anti-EGFR monoclonal antibodies (cetuximab or panitumumab) and developing skin toxicity, were treated by a multidisciplinary team including oncologists, dermatologists, a pathologist and a nurse.All the patients experienced a significative eduction of erythema, papulo-pustular rash, paronychia, fissuring, xerosis and itching.A significative improvement of the global score and of DLQI was evident.No toxicity related to the treatment of skin toxicity was observed.
Conclusions: Treatment with nicotinamide, green tea and moisturizer represents a novel effective approach to manage skin toxicity caused by cetuximab and panitumumab

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A COMPUTER BASED PROGRAM TO PREDICT MALNUTRITION AND SIDE EFFECTS OF THERAPY RELATED TO NUTRITION IN CANCER PATIENTS

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Depending on the entity of cancer patients are more or less malnourished when they enter the hospital for the first time. The individual nutrition status, the type of cancer and at least the therapy will determine the development of the nutrition status. Several questionnaires exist (SGA, MNA etc.) which assess the nutrition status of the patient either at the time point of hospitalisation or during therapy. However, a tool to predict the risk for malnutrition based on available data does not exist. We developed a computer based program which calculates the risk of malnutrition on the basis of known clinical and epidemiological data and treatment libraries, including risk levels for side effects (mucositis, emesis). The specific algorithm (support vector regeression) allows a risk assessment with high precision. The program was trained with the data of 527 cancer patients with different tumor entities and validated with further 263 data sets. To control the predictive sensitivity, the risk calculation was compared with the SGA at different time points. Sensitivity was 94%, specificity 92% and

overall predictive value 94%. The program helps the oncologist to estimate the risk for malnutrition and to start an early nutritional intervention. In addition the patient can be supplied with specific print outs containing nutritional recommendations how to compensate weight loss or a specific dietary advice in cases of mucositis, nausea, taste disorders and further nutrition related problems.

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REVIEW OF STANDARDIZED ORAL CARE PROTOCOL FOR THE PREVENTION OF ORAL MUCOSITIS IN PATIENTS UNDERGOING HEMATOPOIETIC STEM CELL TRANSPLANTATION (HSCT)

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Oral mucositis (OM) is the most debilitating complication in patients undergoing hematopoietic stem cell transplant (HSCT). A standardized mucositis protocol coupled with patient education was implemented for patients undergoing HSCT in Singapore General Hospital. This study evaluated the effectiveness of the protocol in decreasing OM incidence, duration, related complications and controlling the use of preventive agents.

Outcomes were compared between retrospective portion (prior to protocol implementation from Jan-mid Jul 2010) and prospective portion (following protocol implementation from mid Jul-Jan 2011). The primary endpoint was the median duration of any grade of mucositis. Secondary endpoints were the incidence of any grade and ≥grade III mucositis, peak pain score, duration requiring parenteral nutrition, narcotics or topical analgesics, duration of febrile neutropenia, antimicrobial therapy and hospitalization.

A total of 61 patients were included: prospective n=25 vs. retrospective n=36. Median duration of any grade mucositis was comparable between both groups; 11 days(range 2–30) vs. 11.5 days(1–26) (p=0.932). Incidence of ≥grade III was 12% in protocol versus 41.7% in retrospective group (p=0.012). Median duration requiring topical lignocaine was significantly reduced in the protocol group; 4.5 days(1–13) vs. 8 days(3–17) (p=0.022). Other study outcomes were comparable, with trends favoring the protocol group. Methotrexate use for GVHD prophylaxis was identified as a potential confounder.

The standardized mucositis protocol is effective in reducing the incidence of ≥grade III mucositis, leading to improved patients' quality of life. It was also able to curb excessive mouthwashes use whilst still ensuring favorable clinical outcomes in HSCT patients.

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ANTIOXIDANTS IN PLASMA AND BUCCAL MUCOSA CELLS IN THE INCIDENCE AND SEVERITY OF ORAL MUCOSITIS AFTER ALLOGENEIC HAEMATOPOETIC CELL TRANSPLANTATION

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Purpose: Oral mucositis (OM) is known to be a significant complication of chemotherapy preceding haematopoietic cell transplantation (HCT). Antioxidants (AOX)scavenge free radicals, which play a major role in the initiation of OM and may reduce the OM risk.

Study design: The primary objective of this prospective study was to investigate the association between the incidence and severity of OM (WHO oral toxicity scale) and the AOX status in plasma and buccal mucosa cells (BMC). The α-tocopherol, ascorbic acid and ß-carotene concentrations in plasma and BMC were assessed at admission in 70 patients with a median age of 58 years before undergoing allogeneic HCT.

Results: Severe OM (°III-°IV), ulcerative OM (°II-°IV), and no or mild OM (°0-°I) was documented in 14 (20.0%), 32 (45.7%) and 38 (54.3%) patients, respectively. We observed no significant differences in baseline AOX concentrations in plasma or BMC among the OM groups. However, between patients with at least one plasma AOX beneath the normal range (39/70) and those with all plasma AOX in the normal range (31/70), we noted a trend towards longer duration of parenteral nutrition during the study period (10 vs. 8 days; P=0.066).

Conclusions: No single AOX, either in plasma or BMC (α-tocopherol, ascorbic acid and ß-carotene), revealed predictive value for the incidence or severity of OM. However, patients with an overall good plasma AOX status tended to require less PN, a common clinical marker for OM, which may be more relevant than any one AOX to reduce the OM risk.

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IN-ADVANCE END-OF-LIFE (EOL) DISCUSSIONS AND THE QUALITY OF INPATIENT EOL CANCER CARE: PERSPECTIVES OF BEREAVED PRIMARY CAREGIVERS (PCGS)

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Objectives: To determine the association between the presence of EOL discussions (EOLD) prior to the terminal admission and quality of inpatient EOL care.
Methods: We conducted an after-death survey (phone or in-person), utilizing the validated Toolkit of Instruments to Measure End-of-Life Care (TIME). PCGs of advanced cancer patients who died at our institution 1/1/2009-8/31/2010 were contacted >3 months after the patients' death. The endpoints included overall score for EOL care (0–10; 10 = best care), scores of 6 problem domains (0–1; 1 = worst problem), and score for supporting family's "self-efficacy" (knowing what to expect/do during the dying process, 1–3; 3 = greatest support). T-test was used to compare mean scores between patients who had EOLD prior to the admission and those who did not.
Results: 39 of 87 PCGs agreed to participate (45%). 38 patients whose PCGs knew presence/absence of EOLD were included for analyses. 18 (47%) were female; 34 (89%) had metastases; and mean age was 66. PCGs consisted of 20 (53%) spouses, 11 (29%) children, 2 (5.3%) siblings, 2 (5.3%) parents and 3 (7.9%) friends. Patients with EOLD (n=19), as compared to those without (n=19), had higher rating of overall EOL care (9.47 vs 8.58; p=0.0386), lower problem scores in advanced care planning (0.02 vs 0.16; p=0.0282) and care coordination (0.09 vs 0.25; p=0.0378), and greater support for family's self-efficacy (2.68 vs 2.30; p=0.0065).
Conclusions: Cancer patients may receive higher quality of inpatient EOL care if they had in-advance EOLD. Qualitative observations from PCGs will also be presented to highlight the between-group differences.

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CODE STATUS (CS) ON ADMISSION AND THE QUALITY OF INPATIENT END-OF-LIFE (EOL) CANCER CARE: PERSPECTIVES OF BEREAVED PRIMARY CAREGIVERS (PCGS)

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Objectives: Late transition from full code (FC) to Do-Not-Resuscitate (DNR) may cause the sense of unpreparedness and have negative impact on EOL care. Our objective was to determine the association between CS at presentation to the terminal admission and quality of inpatient EOL care.
Methods: We conducted an after-death survey (phone or in-person), utilizing the validated Toolkit of Instruments to Measure End-of-Life Care (TIME). PCGs of advanced cancer patients who died at our institution 1/1/2009-8/31/2010 were contacted >3 months after the patients' death. The endpoints included overall score for EOL care (0–10; 10 = best care), scores of 6 problem domains (0–1; 1 = worst problem), and score for supporting family's "self-efficacy" (knowing what to expect/do during the dying process, 1–3; 3 = greatest support). T-test was used to compare mean scores between patients with FC at presentation and those with DNR.
Results: 39 of 87 PCGs agreed to participate (45%), consisting of 20 (51%) spouses, 11 (28%) children, 3 (7.7%) siblings, 2 (5.1%) parents and 3 (7.7%) friends. Among 39 patients, 18 (46%) were female; 35 (90%) had metastases; and mean age was 66. At presentation, 24 (62%) patients were FC and 15 (38%) were DNR. Overall rating for EOL care was 9 in both groups (p=1.00). No statistically significant differences were found between the groups in any of the problem domain scores or score for supporting family's self-efficacy (2.44 vs 2.53; p=0.55).
Conclusions: Late transition from FC to DNR does not adversely affect the quality of inpatient EOL care in advanced cancer patients.

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ANTIOXIDANTS IN CANCER THERAPY: HARM OR BENEFIT

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Antioxidants are regarded to be safe and healthy in general and to protect cells and tissue from all kinds of environmental and endogenous attacks. This preventive and protective image is generally accepted in the medical and "layman" community. Quite recently, the question has arisen whether concurrent administration of oral antioxidants is contraindicated during cancer treatment, since antioxidants might reduce ROS created by radiotherapy, photodynamic therapy, and some forms of chemotherapy, and thereby decrease the effectiveness of these treatments. Often, cancer therapy produces ROS (reactive oxygen species) which attacks healthy cells and tissue consequently leads to further damage and unintentional side effects. These adverse effects may be decreased by oral antioxidants, given before or simultaneously with tumor treatment. Therefore, there is a conflicting view of antioxidant use in cancer therapy. The positive image of antioxidants does obviously not create the question whether this protection may be also available for cancer cells which subsequently would or could reduce the therapeutic efficacy. From recent studies in our lab we have evidence that high intracellular ascorbic acid reduces apoptosis of cancer cells treated with either PDT or hyperthermia. In contrast, high extracellular ascorbic acid (given intravenously)

generates peroxides and increases apoptosis. Further studies of our group documented that high dose tocopherol down regulates MMP-2 and −9 (induced via ROS) and as a consequence increases tissue stability. There might be a few indications to use antioxidants during cancer therapy (e.g. heart or kidney protection) but the impact on the overall therapy should be considered.

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EFFECT OF GUIDELINE CONSISTENT CHEMOTHERAPY PROPHYLAXIS (GCCP) ON CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV): THE PAN EUROPEAN EMESIS REGISTRY (PEER)

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Background: While anti-emesis guidelines are widely available, no prospective studies have assessed the effect of guideline consistent antiemetic prophylaxis on patient outcomes.

Objectives: The primary endpoint was to compare the proportion of patients with Complete Response (CR: No emesis and no use of rescue therapy) 120 hours post-chemotherapy among patients who receive GCCP for highly or moderately emetogenic chemotherapies (HEC or MEC) with those receiving guideline inconsistent chemotherapy prophylaxis (GICP) during cycle 1.

Methods: PEER was a multi-site (52 centers), prospective, observational study which enrolled adults initiating single-day HEC or MEC from sites in France, Italy, Spain, UK, Sweden, Belgium, Austria and Netherlands. Daily diaries were completed by patients for 6 days from chemotherapy for up to 3 cycles. The GCCP definition used 2006 MASCC guidelines as the gold standard. The proportion with CR was analyzed using multivariate logistic regression which included well known CINV prognostic factors.

Results: 991 patients comprised the evaluable population for cycle 1.The percentage receiving GCCP was 28.8% (10.7% HEC, 28.7% Female AC, and 39.3% MEC). CR was observed in 60.0% and 50.7%, for the GCCP and GICP groups respectively (p=0.008). The adjusted odds ratio was 1.42 (95% CI: 1.03, 1.94; p=0.034) for patients receiving GCCP compared to those receiving GICP. The percentages for the following endpoints were: no emesis (63.5% and 58.5%; p=0.145), no nausea (48.4% and 40.5% p=0.023), and no CINV (42.8% and 34.3%; p=0.012), for GCCP and GICP respectively.

Conclusions: Guideline consistent chemotherapy prophylaxis reduces the incidence of CINV following HEC and MEC.

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LOW-LEVEL LASER THERAPY IN THE PREVENTION OF ORAL MUCOSITIS IN HEAD AND NECK CANCER PATIENTS SUBMITTED CHEMORADIATION- PHASE III TRIAL

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Objetives: This study was designed to assess the efficacy of LLLT in reducing the incidence and/or severity of OM.

Methods: From Jun 2007 to Dec 2010, 47 LLLT and 47 placebo patients (pts) bearer of HNSCC of nasopharynx, oropharynx and hipopharynx entered a prospective, randomized, double blind, placebo-controlled, phase III trial. Chemoradiation consisted of conventional RT 70.2 Gy+ cisplatin 100 mg/m^2 every 3 wks. Main endpoints were OM incidence and severity, RT interruptions and pain intensity. The LLLT used daily was a diode InGaAlP (660 nm-100 mW-4 J/cm²). OM evaluation was done by WHO and OMAS scale.

Results: Mean age was 54.6 and 87.2% of pts were male. Primary site: oropharynx, nasopharynx, hypopharynx. In the LLLT arm the incidence of OM G 3/4 was only 6.4% versus 48% in the placebo arm; HR of 0.13 (IC 95% 0.04 - 0.41, p<0.001). In the laser group 51% of pts did not have ulcers versus 17% in placebo arm (p<0.001**).** LLLT pts had less severe pain (p=0.012), used less narcotic analgesic, HR 0.33 (IC 95% 0.21-0.52, p<0.001) and required less gastrostomia, HR 0.037 (IC 95% 0.17-0.81, p=0.005). Moreover no LLLT pts had RT interrupted due to OM. Preliminary quality of life and cost-effectiveness data supports the efficacy data.

Conclusion: Our results indicate that the LLLT in HNSCC pts submitted to Chemoradiation is an effective tool in

reducing the incidence G 3/4 OM, oral pain, use of narcotic and gastrostomia, and should be the new standard of care in this setting.

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CROSS-SECTIONAL STUDY OF U. S. MEDICINE RESIDENTS' LEVEL OF CONFIDENCE AND SKILLS IN DELIVERING PALLIATIVE AND END OF LIFE CARE

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Introduction: As much as 90% of the last year of life is spent under the care of primary care physicians, whether in nursing homes or community dwellings. Although Family Practice (FP) and Internal Medicine (IM) residents routinely care for dying patients, many of them have never observed an end-of-life (EOL) discussion. Residents are often uncomfortable initiating and optimizing medication therapy to provide increased patient comfort and symptom relief during EOL care. Studies have shown educational interventions improve residents' competence, however, residents rate the quality and quantity of this teaching lower than the rest of their medical education.

Objectives: To assess self-perceived confidence of FP and IM residents in the following facets of EOL care:

- discussing EOL issues with patients and their families
- managing and optimizing patient comfort, pain control, and symptom management through medication therapy

To compare the self-perceived confidence of FP and IM residents in EOL discussions with their self-reported behaviors

To assess how self-perceived confidence of FP and IM residents in EOL discussions reflects the medical education received in their residency program

To compare self-reported prescribing behaviors of FP and IM residents in EOL care with the prescribing behaviors of attending physicians actively practicing hospice and palliative care medicine

To compare questionnaire results between IM and FP residents to assess the differences in educational background, exposure, and comfort level in dealing with EOL management

Design: Cross Sectional Survey

Patients and methods: FP and IM residents throughout the USA

Results & conclusions: Pending (research is ongoing).

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EXPRESSION AND CORRELATION OF LRP AND B-TUBULIN IN NON-SMALL CELL LUNG CANCER AND ITS RELATIONSHIP WITH TUMOR MULTIDRUG RESISTANCE

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Objective: To detect the expression of LRP and βIII-tubulin, and analised its clinical relationship for patients with NSCLC. Provide clinical basis for the choice and improvement of chemotherapy of patients with NSCLC.

Methods: Used the immunohistochemistry technology to detect the expression of LRP and βIII-tubulin in NSCLC.

Results: Positive expression rate of LRP in NSCLC was 73.33%.Expression rate of squamous cell carcinoma (54.55%) was lower than that of adenocarcinoma (76.92%), but they showed no significant difference by the statistical test. Expression of LRP significantly correlated with the degree of differentiation ($P<0.05$), well differentiated (53.85%), moderately differentiated (66.67%), poorly differentiated (91.30%). The lower degree of differentiation,the higher expression of LRP; Positive expression rate of βIII-tubulin in NSCLC was 76.67%.Expression rate was not far-off with squamous cell carcinoma (76.47%) and adenocarcinoma (76.92%), Expression of LRP andβIII-tubulin had no significant relationship with sex, smoking, pathological type and clinical stage; positive correlation of the expression between LRP and βIII-tubulin ($r=0.293$,$P<0.05$) was found, with the increased expression of LRP, expression of βIII-tubulin was significantly increased.

Conclusion: The high expression of LRP and βIII-tubulin in NSCLC was found. The expression of LRP was correlated with the degree of cell differentiation in NSCLC, The relationship of the expression of between LRP and βIII-tubulin was of positive correlation, The expression of multidrug resistance-associated protein may contribute to the chemotherapy guidance of NSCLC. The detection of the proteins is expected to be key points for studing of multidrug resistance in NSCLC chemotherapy and providing a clinical basis for chemotherapy and multidrug resistance mechanism

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DEVELOPMENT/PROPAGATION OF PALLIATIVE CARE IN LOW & MIDDLE INCOME COUNTRIES (LMIC) -PROJECT "SHANTHI"-SRI LANKA

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Introduction: About 10 million people are diagnosed with a cancer in the world each year. Around 5.7 million of them are in Low and Middle Income Countries (LMICs). Due to financial, social, cultural, political and other constraints, most cancer patients in LMICs do not get proper and/or adequate cancer treatment. Therefore they have a greater need for palliative care, much earlier than their counterparts in High-income countries.

Proper palliative care is a human right. Therefore countries with more developed Palliative care systems have a moral obligation to assist the LMICs in developing their own palliative care systems.

Present palliative care situation in Sri Lanka: Presently Sri Lanka has two hospices run by NGO's and has no Community Palliative Care.

There is no formal training in Palliative care for Doctors, Nurses or Allied Health Professionals.

With the help of the WHO and IAEA Sri Lanka has developed a National Cancer Control Program with four key areas. They are: Screening, Early detection, Treatment and Palliative Care.

Project "Shanthi": Some Palliative care professionals from the Sydney Institute of Palliative Medicine in Sydney and the Pain and Palliative Care Department of The Peter MacCallum Cancer Centre in Melbourne have come together through "Project Shanthi" to develop Palliative Care in Sri Lanka within their National Cancer Control Program with WHO collaboration.

This will include starting community palliative care, educating and training palliative care professionals, Curriculum development, development of Hospice units and consultative services in the main cancer centre and other major regional hospitals.

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PROSPECTIVE EVALUATION OF ORAL MUCOSITIS BY DAY-BY-DAY ASSESSMENT IN HEMATOLOGICAL PATIENTS SUBMITTED TO STEM CELL TRANSPLANTATION

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Introduction: Oral mucositis (OM) is a major issue in the setting of hematopoietic stem cell transplantation (HSCT).

Methods: Assessment of OM in patients (pts) undergoing autologous (auto) or allogeneic (allo) HSCT was conducted daily from conditioning regimen to day +20 or discharge. OM was assessed according to WHO scale.

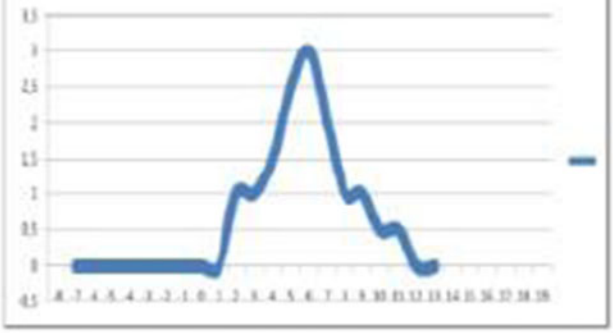
Results: 60 HSCT (10 alloHSCT, 50 autoHSCT) were performed from January 2008 to Agoust 2010 (high dose chemotherapy conditioning regimen), in adult patients with lymphoma (n=21), multiple myeloma (n=29), acute leukemia (n=8) or other diagnosis (n=2). Prevention measures were: in allogeneic HSCT, mouth rinses alone (clorexidine based); in autologous HSCT, mouth rinses (clorexidine based) alone or associated with probiotics (Lattobacilus brevis CD2) in 43 and 7 pts, respectively. Oral criotherapy was associated in 42/50 pts undergoing intermediate-high dose melphalan-based conditioning regimen and autoHSCT. 57/60 HSCT were eligible for analysis. Data about OM are presented in table. Prevention of OM with oral criotherapy in autoHSCT (high dose melphalan conditioning in myeloma pts only) resulted on reduction of severe OM (grade 3–4). Data about OM prevention with probiotics are encouraging, although preliminary.

Table. Grade, onset, duration, peak and curve pattern analysis of OM

Oral Mucositis	≥ 1	≥3	ONSET (from HSCT) (median; min,max)	DURATION (median; min,max)	PEAK (from HSCT) (median; min,max)	Curve pattern analysis (triangular / rectangular) (HSCT eligible n = 34)
All HSCT	45/57 (79%)	17/57 (30%)	+4 (-2,+14)	9 (1,18)	+8 (+3,+14)	22/12
Autologous	38/48 (79%)	12/48 (25%)	+3 (-2,+10)	8 (1,18)	+8 (+3,+11)	19/9
Auto MEL200 oral criotherapy	16/20 (80%)	2/20 (10%)	+4.5 (+1,+10)	8 (1,15)	+8 (+6,+11)	
Auto MEL200 without oral criotherapy	5/6 (83%)	3/6 (50%)	+5 (+1,+8)	7 (5,10)	+9 (+8,+10)	
Allogeneic	7/9 (78%)	5/9 (56%)	+6 (0,+14)	10 (1,16)	+11 (+9,+14)	3/3

Rectangular pattern example

Triangular pattern example



Conclusion: These data may be helpful to define the impact of OM in HSCT and evaluate preemptive and treatment approaches.

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EFFECT OF OCTREOTIDE IN PATIENTS WITH MALIGNANT BOWEL OBSTRUCTION

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Introduction: Malignant bowel obstruction causes gastrointestinal symptoms and leads to diminished quality of life in patients with advanced cancer. Several studies have shown the efficacy of octreotide for the relief of malignant bowel obstruction-related symptoms. The aim of this study is to assess the efficacy and safety of octreotide in patients with malignant bowel obstruction.
Methods: We retrospectively reviewed medical records of twenty nine patients who had suffered from malignant bowel obstruction without clinical improvement of conservative care and subsequently, received octreotide treatment. Initial dosage of octreotide was 0.1 mg/day, and dose was escalated depending on the clinical effect. For each patient, we assessed visual analogue scale (VAS) of pain, number of vomiting episode, and amount of nasogastric tube drainage.
Results: Median dosage of octreotide was 0.2 mg/day (range 0.1∼0.6), and median duration from initial medication to death was 20 days (range 2∼103). VAS before and after octreotide treatment were 5.6±1.24, and 2.7±0.96, respectively. The numbers of vomiting episode before and after octreotide treatment were 3.6/day±2.5, and 0.4/day±0.8, respectively. The mean amounts of nasogastric tube drainage before and after octreotide treatment were 975±1,083 cc/day and 115±196 cc/day, respectively. Statistically significant reduction in VAS, the number of vomiting episode and the amount of nasogastric tube drainage were observed after octreotide treatment ($P<0.05$).
Conclusions: Administration of octreotide in patients with malignant bowel obstruction, which is uncontrolled by other medication, was effective and safe. In such clinical situations, physicians should consider to add of octreotide for symptomatic control.

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EFFICACY OF PREVENTIVE TREATMENT FOR DELAYED EMESIS INDUCED BY FOLFOX4 CHEMOTHERAPY

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Purpose: The control of delayed emesis is very important in order to continue ambulatory chemotherapy. We performed retrospective study that examined the efficacy of preventive treatment (granisetron + dexamethasone + domperidone) for delayed emesis induced by FOLFOX4 chemotherapy for advanced and recurrent colorectal cancer.
Petients and methods: The subjects were 92 patients who underwent FOLFOX4 chemotherapy at the Cancer lnstitute Hospital of JFCR (group with preventive treatment: 50, group without preventive treatment: 42), and the observation period was set as the 1st-9th cycle. The primary end point was complete nausea/vomiting inhibition rate.
Results: The complete nausea inhibition rate was 50.0% in the group with and 21.5% in the group without preventive treatment, showing a significantly higher inhibition rate in the former ($p=0.0047$). The complete vomiting inhibition rates were 86.0% and 66.7%, respectively, again showing a significantly higher inhibition rate in the former ($p=0.015$). On multivariate analysis (multiple logistic analysis), the evelopment of nausea/vomiting and preventive treatment for delayed emesis were significantly associated, showing that the treatment was an independent preventive factor. AII adverse reactions induced by preventive treatment were mild, suggesting no safety-related problem.
Conclusion: These findings suggested the usefulness of preventive treatment with granisetron, dexamethasone, and domperidone for FOLFOX4 chemotherapy-induced delayed emesis.

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CHEMOTHERAPY SIDE EFFECTS IN GYNECOLOGIC CANCER

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Gynecologic cancer comprises ovarian cancer, Fallopian tube cancer, extraovarian papillary serous carcinoma, endometrial cancer, cervical cancer, cancers of the vagina and vulva and gestational trophoblastic neoplasia.
Gynecologic cancers cause a number of disease specific complications. Furthermore treatment of gynecologic cancer frequently uses multimodality therapy including surgery, external beam radiotherapy, brachytherapy and chemotherapy. Therefore women with gynecologic cancers are often exposed to multiple disease specific and/or therapy-related symptoms.
The table summarizes the most frequently used antineoplastic agents in gynecologic oncology and the side effects induced by these.

Agent	Anemia	Neutropenia	Thrombopenia	Neurotoxicity	Ototoxicity	Nephrotoxicity	Alopecia	Diarrhea	Emetic risk
Cisplatin	++	++	++	+++	+++	+++	+	++	+++
carboplatin	+++	++	+++	+	++	++	+	+	+++
Doxorubicin	+++	+++	+++	0	0	+	+++	0	+++
Paclitaxel	+++	+++	+++	+++	+	0	+++	++	++
Doxorubicin	+++	+++	+++	++	0	0	+++	++	++
Topotecan	++	++	++	0	0	+	++	++	++
Gemcitabine	++	++	++	+	0	+	+	+	++
Vinorelbine IV	++	++	+	++	0	+	++	+	+
Pegylated liposomal doxorubicin	+	+	+	0	0	0	+	+	++

[Side effects of chemotherapy in gynecologic cancer]

Survivorship problems in gynecologic cancer are primarily due to side effects and complications from surgery and radiotherapy. The most frequently reported are lower extremity lymphedema, sexual problems, diarrhea and urinary problems.

The more frequent use of extensive surgery, in particular in ovarian cancer, the introduction of agents such as bevacizumab and newer multi-receptor targeting agents emphasize the importance of continued research in supportive care.

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PALLIATIVE THORACOSCOPIC PLEURODESIS IN MALIGNANT PLEURAL EFFUSION

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Objectives: The study was aim to analyze the results of pleurodesis for malignant pleural effusion for relief of dyspnea as palliative intervention performed by pulmonologist.

Methods: Total of 163 patients with malignant pleural effusion underwent thoracoscopy for palliative pleurodesis. There were 93 males (57.05%) and 70 females (42.95%), aged between 44 to 94 years (mean age: 60.6 years). The effusion was right sided in 86 patients (52.7%) and left sided in 66 (40.49%), and bilateral in 11 (6.74%). Thoracoscopy was performed under local anesthesia with moderate sedation in all patients. Pleurodesis was done by instillation of tetracycline solution.

Results: Pleurodesis was done in 151 cases. Duration of pleural drainage ranged between 1 and 11 days (mean: 3.64 days). No intraoperative mortality was noted. Two patients (1.2%) had surgical emphysema, 1 patient had re-expansion pulmonary edema (0.6%) as post-operative complications. 6 (3.68%) cases underwent a bilateral pleurodesis. No pleurodesis was done in 12 cases because of non-expand (3.68%) and presence of multiple adhesions (3.68%). The 122 patients had regular follow up and mean follow-up period was 7.2 months. 10 patients had recurrences (8.19%), 6 of which were treated by repeat pleurodesis. The results were good in 134 patients (82.20%) and pleurodesis failure in 5 patients (3%).

Conclusions: Medical thoracoscopy for malignant pleural effusion have good success rate for pleurodesis with tetracycline as palliative intervention for dyspnea relief. It can be done under local anesthesia with moderate sedation by pulmonologist.

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AN ETHNOSCIENCE APPROACH TO DEVELOP A CROSS-CULTURAL UNDERSTANDING OF CANCER-RELATED FATIGUE

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Objectives: The study objectives are to understand the socio-cultural contexts of fatigue in individuals with advanced cancer living in five distinct countries: Canada, Thailand, England, Italy and Sweden; to refine the conceptual definition of fatigue as outlined in the Edmonton Fatigue Framework; to help health care professionals communicate more clearly with patients and potentially influence and develop fatigue interventions.

Methods: A qualitative ethnoscience approach is being used to compare the way participants from each study population use language to describe fatigue. Data are being collected using two semi-structured interviews, incorporating a card sort technique, and then used to construct

taxonomies showing the dimension of fatigue in each population. Taxonomies will be compared to show similarities and differences across study populations. Data collection in Canada (n=27), Thailand (n=10), England (n=9) and Italy (n=16) is complete, but continues in Sweden.

Results: Analysis shows that while both "body" and "mind" are central to the nature of fatigue in the study populations, the dimensions within these two central domains vary. For example, "cognitive function" was central to "mind" in the Canadian data set, but "blurred consciousness", a more spiritually-oriented concept, was central to "mind" in the Thai data set.

Conclusions: Our team has developed strategies utilising ethnoscience to advance understanding of cancer-related fatigue and contribute to the development of a globally relevant conceptual framework for fatigue management. It is envisioned that the study will stimulate discussion surrounding the ways culture shapes the meaning of illness and therefore influence directions toward culturally sensitive interventions.

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DISABILITY AND HEMATOPOIETIC STEM CELL TRANSPLANT: A STUDY FROM THE QUALITY OF LIFE WORKING PARTY OF THE ROME TRANSPLANT NETWORK

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Introduction: Disability (DI) is defined as reduction on ability to attend normal activities of daily living. DI was rarely explored and reported in hematological patients undergoing hematopoietic stem cells transplantation (HSCT).

Methods: We conducted a restrospective study among the seven Institutions participating in the Rome Transplant Network (RTN), a metropolitan transplant program, to assess DI during the period of HSCT hospitalization. DI was defined as a reduction of Barthel Index (BI). BI items were assessed by nurse staff.

Results: From September 2009 to August 2010, 230 HSCT were performed in RTN centres. Median age was 36,1 (0,09–68,8), 112 male. Diagnosis was: acute leukemia in 80, multiple myeloma in 47, lymphoma in 64, solid tumor in 13, inherited disorder in 13, myelodisplastic/myeloproliferative disorders in 5, aplastic anemia in 5, other diagnosis in 3. 117 autologous and 113 allogeneic transplants were performed.

Disability was observed in 137/230 HSCT (59%). Disability was mild (BI=67–99%), moderate (BI=33–66%) and severe (B I=0–32%) in 34 (15%), 63 (27%) and 40 (17%) patients, respectively. Severe disability was significantly higher in pediatric patients: 21/66 (32%)<16 years vs 19/167 (11%) >16 years (p=0.0002) and in recipients of allogeneic transplant: 26/113 (23%) allogeneic vs 14/117 (12%) autologous HSCT patients (p=0.0025).

Conclusion: Our study demonstrates that disability in HSCT is a frequent complication and allows to identify risk categories of patients, for whom preventive measures, should be preferentially provided.

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RESULTS OF THE CAT (CANCER AND THROMBOSIS) PROSPECTIVE RANDOMIZED CLINICAL TRIAL TESTING THE ADDITION OF AN IVC FILTER TO FONDAPARINUX

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Background: The role of adding an inferior vena cava filter (IVCF) to parenteral anticoagulation in cancer patients with venous thromboemboli (VTE) has not been tested in prospective randomized trials (RCTs). We conducted this RCT to determine if IVCF placement plus anticoagulation is advantageous.

Methods: 64 patients with DVT (86%) and/or PE (55%) were randomized to receive anticoagulation with fondaparinux with or without IVCF.

Results: 64 patients randomized/63 evaluated. Cancers included: Lung (25%); Breast (18%), Colon (14%), Pancreas (14%), Lymphoma (8%), Ovarian (6%). ECOG PS: 0 or 1 (44%); 2 or 3 (56%). Findings are below:

	FONDAPARINUX	FONDAPARINUX + IVC FILTER
Number of Patients	32	31
Recurrent DVTs	0	0
Median Survival	493 Days	266 Days (p 0.57)
Complete Resolution of DVTs (n=107)	61% (47%–73%)*	38% (24%–53%)*
Complete Resolution of PEs (n=43)	32% (15%–54%)*	67% (41%–87%)*
Major Bleeding Complications	2 Patients	1 Patient
Minor Bleeding Complications	2 Patients	2 Patients
IVC Filter Complications	–	2 Patients
Required Placement of IVC Filter	0 Patients	–

[RESULTS]

*95% CIs

Conclusions:
1) No advantage was found for IVCF in addition to anticoagulation; no subpopulation was identified benefitting from IVCF placement.
2) IVCF placement is costly and invasive without benefit apparent in this study in cancer patients given fondiparinux parenteral anticoagulation.
3) A high complete VTE resolution rate with fondaparinux was observed.

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CAPHOSOL MOUTH RINSE APPLICATION IN INFANTS AND YOUNG CHILDREN WITH ORAL MUCOSITIS

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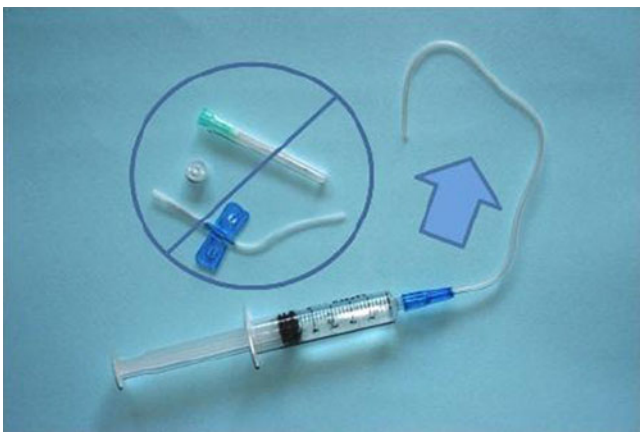
Objectives: Calcium phosphate mouth rinse (Caphosol) has been effective in lowering peak pain and shortening the duration of oral mucositis, following stem cell transplantation, irradiation and chemotherapy. In older patients, self-applied mouth rinse is easy and proves effective. A convenient and effective method for applying Caphosol to very young patients has been improvised.
Methods: Caphosol vials are mixed in a cap. The mixture is then aspirated into a 5 cc syringe (needle discarded). A butterfly-type needle device is stretched in order to brake off the needle at the distal part (discarded). By atta ching the proximal part to the syringe, a "hose" is created (Figure).



[Figure]
Then, the atraumatic plastic end of the catheter is directed to the buccal mucosa, to "hose down" the tissues gently.
Results: This procedure is easily comprehended and applied by nurses and parents. As the Caphosol applications relieves the patients' symptoms, they become compliant to the mouth treatments, despite their impaired overall condition.
Conclusion: Alternative to self-applied Caphosol mouth rinses, caregivers can apply mouth treatments with a syringe and a butterfly needle that are readily available. This effective atraumatic hose system can also be useful for elderly patients, an easy and effective alternative to mouth rinses.

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MARKERS OF BONE REMODELING AND SKELETAL MORBIDITY IN PATIENTS WITH SOLID TUMORS METASTATIC TO THE SKELETON RECEIVING ZOLEDRONIC ACID

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Objective: To evaluate the effect of treatment with the biphosphonate zoledronic acid (ZA) on markers of bone remodeling and to detect possible correlations of marker response with skeletal morbidity and clinical outcomes in patients with solid tumors and osseous metastases.
Patients and methods: The following serum biochemical markers were measured at the onset of skeletal metastases and six months after initiation of treatment with ZA (4 mg monthly) in 70 patients with breast (n=30), lung (n=18) or prostate (n=22) cancer: C-terminal cross-linking telopeptide of type I collagen (CTX), tartrate-resistant acid phosphatase isoform 5b, bone-specific alkaline phosphatase, receptor activator of nuclear factor kappaB ligand (RANKL), osteoprotegerin (OPG) and osteopontin. Logistic regression models were applied to assess the correlation between marker level changes and skeletal related events (SRE, primary endpoint), recurrence and death.
Results: Within a median follow-up of 32 months, 34 patients (48.6%) presented with at least one SRE and 48 patients (68.6%) relapsed. RANKL/OPG ratio was upregulated in patients with breast and lung cancer and tended to decline after treatment with ZA. CTX levels were significantly reduced after treatment (p=0.003). Tumor type and ECOG Performance Status were the only significant predictors for recurrence and death and none of the markers was able to improve predictive value when added to the model.
Conclusions: Treatment with ZA tends to normalize the severe disruption of the RANKL/OPG axis in skeletal metastases. Larger cohorts are needed to determine whether marker level responses may be predictive for SRE, disease progression or survival.

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IMPACT OF A COMMUNITY PALLIATIVE CARE TEAM ON THE SYMPTOM MANAGEMENT OF PATIENTS AND QUALITY OF NURSES' WORK LIFE

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Cancer is the second-leading cause of death in Canada. Research indicates that the majority of individuals dying from cancer would prefer to die at home. Lack of overall coordination and integration of palliative care services, in addition to lack of standardized care approaches have been barriers to providing optimal care in this population (Cancer Care Ontario, 2006).

In 2007, a community nursing agency developed a palliative care team, subsequent to anecdotal observations that indicated a need for improved symptom management and support in the palliative population of patients. Concurrent with the formation of a palliative care team, the Ontario Ministry of Health and Long-Term Care's Provincial End-of-Life Care (EOLC) Strategy was being implemented. A component of the EOLC Strategy was the Provincial Palliative Care Integration Project (PPCIP). The PPCIP was intended to improve access to coordinated palliative support for cancer patients, and to provide better quality and consistency of symptom screening, assessment, and management, through the introduction of standardized patient assessment tools, including the Edmonton Symptom Assessment Scale (ESAS), and the Palliative Performance Scale (PPS).

In order to assess the impact of the palliative care team on symptom management of patients and quality of nurses' work life, a pilot study was undertaken to describe the experience of nurses working on the team. This presentation will describe one community organization's experiences including facilitators and barriers in developing a palliative care team, implementing the standardized assessment tools utilized by the PPCIP, and managing symptoms of patients with advanced diseases.

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THE PATTERN OF ANTIMICROBIAL USE FOR PALLIATIVE CARE IN-PATIENTS DURING THE LAST WEEK OF LIFE

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Background: In terminally-ill cancer patients approaching the dying phase, liberal use of antimicrobials is often viewed as irrational. No previous reports have reviewed current antimicrobial use in palliative care settings in Saudi Arabia.
Objective: The objective of this study was to explore the pattern of antimicrobial use in a tertiary palliative care unit (TPCU) during the last week of patients' life.
Methods: Medical records of all patients who died in the TPCU over a 14 month period were reviewed for demographics as well as the frequency and rationale of antimicrobial use during the patients' last week of life.
Results: Of 138 patients who died with advanced cancer in the TPCU, 87 (63%) were on one or more antimicrobials during their last week of life. Antibiotics were more frequently used as compared to antifungal and antiviral agents, 64 (46.4%); 45 (32.6%); and 2 (1.5%), respectively. About one third (31.3%) of patients who received antibiotics during their last week of life were prescribed more than one antibiotic. Antimicrobials were mostly given systemically (79%) rather than topically (21%). The most common rationales for antimicrobial prescribing were oral thrush in 36 patients (25.4%), wound care in 29 patients (20.4%), and on empirical basis in 29 patients (20.4%).
Conclusions: The current practice of antimicrobial prescribing, especially for patients who are eminently dying may need to be reviewed. Initiation of antimicrobial treatment in this group of patients should be based on clear treatment goals and desired outcomes, considering views of patients and families.

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EVIDENCES FOR EDUCATION DIFFERENCES IN THE PERCEPTIONS OF CANCER PAIN

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Objectives: While over 50 million people are living with some type of pain and chronic pain is experienced by approximately 50–90% of patients with cancer, little is known about demographic differences in chronic cancer pain. So, the objective of this study was to determine if there were demographic differences in patients with cancer.
Method: A sample with types of cancer (n=105) who were experiencing pain, answered to the West-Haven Multidimensional Pain Inventory (MPI). The MPI is a 61 item, self-report measure that adopts a cognitive -behavioral perspective to examine how participants evaluate and manage their pain. The measure yields three coping styles: Adaptive (AC), Interpersonally Distressed (ID), and Dysfunctional (DYS); and consists of eight subscales that evaluate the patient's perception of pain.

Results: The results showed that no significant sex differences were found in AC and ID, only significant sex differences was in outdoor activity away from home (decrease in female) and activity away from home(decrease in male). In addition, low educated participants reported significantly higher interference in daily living, pain severity and lower self control than high educated participants. There were no differences between the three yields in age, marital status and income.
Conclusions: The study findings are important because they suggest that, education and otherwise coping may not influence patients' perceptions of and responses to chronic cancer pain.

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A PILOT STUDY OF "SOUL MEDICINE": TARGETED THERAPY FOR THE 'FEAR-FACTOR' IN CANCER

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Objectives: To explore how spiritual, non-religious, wisdom and practices might become a 'targeted therapy' for the experience of fear while living with a cancer diagnosis.
Methods: A six week group program of 1.5 hour sessions was developed for women undergoing cancer treatment or under surveillance. 6 groups were completed with participant numbers ranging from 4–7 totaling 25 participants. The group process used a combination of structured exercises and spontaneous sharing. Modalities targeted different learning styles and 'left' and 'right' brain approaches: diad sharing, group sharing, somatic awareness, various meditation practices, creative process through collaging, readings, poetry, music and image. Harvey Chochinov's Patient Dignity Inventory was used as a marker for beginning and end reports of their well being.
Results: Participants reported significant benefits: greater peace with mortality, less anxiety about the future and less need to control it, more able to be with their 'what is,' greater capacity to tolerate difficult feelings/situations, greater connectedness with their higher power/life/self/relationships. Those diagnosed with metastasis during or after the group reported using the strategies and wisdom to assist with coping significantly better than they expected.
Conclusions: These pilot groups demonstrated highly positive benefits in integrating spirituality and practices into cancer treatment. It indicates the need for further evaluation of this approach measuring well-being and also prognostic outcomes. Spiritual practices/wisdom harbor under-researched potential as a 'targeted therapy' embedded into treatment for the existential/spiritual rigors of a cancer diagnosis.

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ELECTRONIC PALLIATIVE CARE FOR A COMMUNITY CANCER CLIENT: THE IMPACT OF REAL TIME CAREGIVER SUPPORT

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Objectives: A case-study demonstrating significant enhancement and efficiency of care using real time electronic ("Blackberry") interaction between client & primary caregiver with their palliative care team.
Methods: Retrospective case-study of a palliative care community client & their primary caregiver with the use of a secure blackberry device. This allowed for real time communication between the primary caregiver and their palliative care team: Nurse Practitioner, Spiritual Care Specialist, Palliative Care Physician, Oncologist, and others. Documentation of this electronic communication allowed for a retrospective study of the significant enhancement of care provided by the Primary Caregiver, Nurse Practitioner and the Spiritual Care Specialist. This review highlights three phases that were enhanced during the client's disease trajectory:
- diagnosis and development of the treatment plan
- supporting optimal function and stability during palliative living
- responsive support and direction at the bedside during the decline to death

Results:
- Hospital avoidance
- Responsive pain and symptom management
- Coaching and counseling for self-management of complex disease processes
- 360 degree, "wrap-around" medical and supportive care interaction
- Prevention of primary caregiver burnout
- Time sensitive individualized care planning
- Real time electronic primary caregiver support at the death bed in the home

Conclusions: This case-study demonstrates clinical efficacy and efficiency of electronic communication in palliative community based care. The reported lack of burden on the health care professionals warrants further investigation. In addition to clinical impact there was also enhancement of client and primary caregiver well-being during palliative living and at end-of-life.

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DEVELOPMENT, DISSEMINATION AND IMPLEMENTATION OF THE USE OF A SUB-CUTANEOUS IMPLANTABLE PLEURAL PORT: IT TAKES CREATIVITY AND COLLABORATION

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Objectives: To assess the diffusion of innovation since the introduction of a new approach to the management of recurrent malignant pleurisy in a tertiary cancer center: a subcutaneous implantable pleural port (SIPP).
Methods: SIPPs were introduced in our center in August 2005. The decision to use a SIPP or to perform a videothoracoscopic talc pleurodesis was taken during the weekly chest disease multidisciplinary consultation meeting benefiting the presence of 2 thoracic surgeons and 1 anesthetist. All patients suffered from dyspnea previously improved by needle pleural aspiration.
Results: Results are outlined in the table 1.
[table 1]

	talc pleurodesis	sipp	more than 4 needle aspiration
2004	15		10
2005	19	5	5
2006	10	25	3
2007	5	25	2
2008	8	42	1
2009	6	44	2
2010	7	45	1

Evacuating pleural aspiration was performed in the hospital at the patient'request as required by respiratory discomfort by a nurse (after establishing an aspiration protocol). All nurses involved were trained.
Conclusion: This innovation was rapidly adopted throughout the institution, due to logistic factors that ease the use of the indwelling catheter. All factors mentioned in E. M. Rogers theory are verified with SIPP: benefit, simplicity, triability, observability and compatibility.

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THE UTILITY OF HYPERBARIC OXYGEN THERAPY TO TREAT RECURRENT SUBACUTE BOWEL OBSTRUCTION AFTER PREVIOUS PELVIC RADIOTHERAPY: A CASE SERIES

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Background & objective: Subacute bowel obstruction is a potential complication following pelvic radiation therapy. It has been previously thought that hyperbaric oxygen therapy (HBOT) may not be useful for treatment of established radiation fibrosis. We report our experience with the use of HBOT for recurrent radiation-induced subacute bowel obstruction.
Methods: This is a retrospective case series. Radiological imaging had excluded the presence of recurrent or new cancer. Medical causes for subacute obstruction had been treated and had not led to resolution of symptoms.
Results: During 2007–2010, 5 patients with radiation induced subacute obstructive bowel symptoms were referred for HBOT (four females and one male; mean age 74; range 58–84). The primary tumours sites were endometrium in 2 patients, ovarian, cervical and prostate; and patients were treated 2 to 10 years previously with radiotherapy. Prior to HBOT patients experienced subacute obstructive bowel symptoms at 1–6 weekly intervals. Four patients had significant weight loss. Patients received 100% oxygen in a multiplace hyperbaric chamber at a pressure of 2.4 atmospheres absolute for 90 minutes once a day, 5 to 7 days weekly. All patients were initially referred for 40 sessions of HBOT. Three patients required a further extra 20 sessions for complete resolution of bowel symptoms. HBOT was well tolerated with no side effects. Patients have remained well for 6–24 months of follow up subsequently.
Conclusions: HBOT may be an effective treatment of radiation-induced subacute bowel obstruction and requires further evaluation.

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THE BURDEN OF COMORBID ILLNESS IN CANCER SURVIVORS IN THE UNITED STATES

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Introduction: Understanding the burden of non-cancer diseases will facilitate improved care for the growing number of cancer survivors in the USA.
Aim: To determine comorbidity burden and health status in cancer survivors.
Methods: Using results from the Behavioral Risk Factor Surveillance System 2009, a telephone survey of a representative sample of persons in the USA, we determined the prevalence of comorbid illness in persons with self-reported cancer history compared to unmatched controls without cancer. We determined self-rated health and

number of days in the last month with poor health or decreased activity.

Results: The estimated US adult survivor population was 20,531,084 persons with a mean age of 62.7 years; controls represented 192,059,322, with a mean age of 45.0 years. Of cancer survivors, 84.6% were non-Hispanic whites compared to 68.5% of controls. Comorbidities were more prevalent for survivors. Even when stratified by age, prevalence of comorbidity, especially cardiovascular disease and hypertension, was higher across younger and older age groups for survivors compared to controls. Cancer survivors reported poorer health status.

Conclusions: We showed that cancer survivors in the USA have increased health needs compared with non-cancer counterparts. Guidelines and care plans should address the management of comorbid diseases before and after cancer therapy.

[Table 1. Comorbid Illness and Health Status]

	Comorbid Conditions, Percent					Health Status		
	Cardiovascular Disease	Hypertension	High Cholesterol	Diabetes Mellitus	Arthritis	Fair or poor health, percent (95% CI)	Days with poor health, mean (SE)	Days with decreased activity, mean (SE)
Cancer Survivors	17.9	48.0	49.8	15.7	48.7	27.8 (27.1–28.5)	6.1 (0.1)	6.5 (0.1)
Controls	6.7	27.6	37.0	8.4	23.7	14.5 (14.2–14.7)	3.3 (0.02)	3.3 (0.02)

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3-DAY APREPITANT PLUS PALONOSETRON AND DEXAMETHASONE FOR THE PREVENTION OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING IN PATIENTS RECEIVING CISPLATIN-BASED CHEMOTHERAPY

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Background: The purpose of this study was to ascertain the effectiveness of 3-day aprepitant plus palonosetron and dexamethasone for the prevention of chemotherapy-induced nausea and vomiting (CINV) in patients with solid tumors receiving cisplatin-based high emetogenic chemotherapy (HEC).

Methods: Chemotherapy-naïve patients with solid tumors, receiving cisplatin-based HEC (cisplatin ≥50 mg/m^2), were treated with aprepitant 125 mg p.o., palonosetron 0.25 mg i.v., and dexamethasone 12 mg i.v., 1-h before chemotherapy. Aprepitant 80 mg p.o. and dexamethasone 8 mg p.o. were administered daily on days 2–3. Patient could not have pre-existing etiologies for vomiting. Efficacy and safety data were obtained from daily patient diaries recording episodes of emesis and severity of nausea. Primary end point was complete response (CR; no vomiting and no use of rescue medication), during the overall study period (0–120 h).

Results: A total of 204 patients were included in the study. Median age was 63 years (range, 28–82 years), 28% were female, and most common tumors were lung (45%), stomach (24%), and biliary tract cancer (18%). 6%, 35%, and 59% of patients were received cisplatin 50 mg/m^2, 60 mg/m^2, and 70 mg/m^2, respectively. CR during the overall study period was seen in 78% of patients, including 91% with CR for the acute period (0–24 h) and 85% for the delayed periods (24–120 h). Male gender was significantly associated with improved complete response.

Conclusions: This study shows that 3-day aprepitant in combination with palonosetron and dexamethsone is effective to prevent acute and delay CINV in patient receiving cisplatin-based HEC.

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PERCEIVED UNMET NEEDS AND THEIR EFFECTS ON THE QUALITY OF LIFE AMONG CHINESE CANCER SURVIVORS

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Objectives: To identify unmet supportive care needs and examine its associations with the quality of life (QOL) of Chinese cancer survivors.

Methods: We recruited 331 Chinese adult cancer survivors during 2010 from the clinical oncology department of a local teaching hospital that serving about one seventh of the Hong Kong population. A research assistant administered a questionaire including the 34-item Supportive Care Needs Survey (SCNS-SF34), the supplementary module of access to health care and ancillary support services and the Chinese version of Functional Assessment of Cancer Therapy: General (FACT-G).

Results: Among the five domains of the SCNS-SF34, ranking from the highest to the lowest unmet supportive care needs were (1) health system & information, (2) patient care & support, (3) physical & daily living, (4) psychological and (5) sexuality. Repeated measures ANOVA showed that the scores of the first two highest subscales were significantly higher than the rest. All subscale scores of SCNS-SF34 were significantly associated with QOL measured by FACT-G ($r=-0.52$ to -0.21, all p values <0.001). Participants with higher unmet needs were associated with poorer QOL. Transportation (39%), monetary allowance for travel, treatment and equipment expenses (35%) and 24-hour telephone support and cancer advisory service (28%) were the three most commonly reported unmet needs of healthcare and ancillary support services.

Conclusions: The results provided valuable information for healthcare professionals to understand the needs of cancer survivors, evaluate the existing healthcare services and identify essential components of a patient-centered service delivery model.

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VALIDATION OF THE CHINESE VERSION OF SUPPORTIVE CARE NEEDS SURVEY AND SUPPLEMENTARY MODULE OF ACCESS TO HEALTH CARE SERVICES

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Objectives: To translate the 34-item Supportive Care Needs Survey (SCNS-SF34) and the supplementary module of access to health care and ancillary support services into Chinese and evaluate their psychometric properties in Chinese cancer patients.

Methods: The study consisted of three phases. In phase I, the forward and backward translation procedure was used to develop the Chinese version of the SCNS-SF34 and the supplementary module. In phase II, the cultural equivalence of translation of the two instruments were evaluated through content validity and cognitive debriefing. In phase III, the construct validity of the two instruments were examined with internal consistency and confirmatoty factor analysis.

Results: The results of CVI of the Chinese version of SCNS-SF34 and the supplementary module were 0.84 and 0.87 respectively. Cognitive debriefing was carried out with 20 cancer patients. Modifications of the instruments were made based on the suggestions of the expert panel and patients to ensure the clarity and semantic equivalence of the Chinese versions. The internal consistency of each subscale of the Chinese version of SCNS-SF34 were good (Cronbach's alpha ranged from 0.78 to 0.92), and the alpha for the entire scale of the supplementary module was 0.8. Confirmatory factor analysis indicated an adequate fit to the five-domain factor structure (RMSEA = 0.074, NNFI = 0.96 and SRMR = 0.080).

Conclusions: The findings of the study showed that the Chinese version of SCNS-SF34 and the supplementary module is a reliable and valid instrument which is suggested to be used in future to examine the supportive care needs of Chinese cancer patients.

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EFFECTS OF *STREPTOCOCCUS THERMOPHILUS* TH-4 IN RATS WITH DOXORUBICIN-INDUCED INTESTINAL MUCOSITIS

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Objectives: Probiotics are live bacteria that confer health benefits by improving intestinal microbial balance. We have demonstrated that the novel probiotic, *Streptococcus thermophilus* TH-4 was protective in rats methotrexate-induced intestinal mucositis. The aim of this study was to determine whether TH-4 could prevent and reduce the intestinal damage in rats with Doxorubicin-induced intestinal mucositis.

Methods: Female Dark Agouti rats (n=8/group; 4 groups) were orally gavaged TH-4 (10^9cfu/mL) or skim milk (SM; vehicle) from days 0–8. At day 6 rats underwent intraperitoneal injection of saline or Doxorubicin (20 mg/kg) and killed on day 9. Blood was collected for whole blood analysis, and small intestinal tissues collected for determinations of sucrase and myeloperoxidase (MPO) activities and histological assessment.

Results: Bodyweight significantly decreased in the SM+Doxo and TH-4+Doxo groups, compared to respective controls. Circulating neutrophils were increased and lymphocytes decreased in all Doxorubicin groups compared to healthy controls ($p<0.05$). Jejunal and ileal MPO activity was unchanged across all groups. Jejunal sucrase activity decreased in both SM + Doxo (12.01±3.95U/mg protein) and TH-4 + Doxo (14.37±3.71U/mg protein) compared to healthy controls (218.56±25.18U/mg protein and 426.

70±23.50U/mg protein respectively). Similar results were also observed in the ileum. Jejunal villus height was decreased in all Doxorubicin groups compared to healthy controls ($p<0.05$). Jejunal histological severity scores were lower in TH-4 + Doxo (9.2±0.1) compared to SM+Doxo controls (10.9±0.1; $p<0.05$).

Conclusion: TH4 did not prevent intestinal damage in rats with Doxorubin-induced intestinal mucositis. Further studies delineating the mechanisms of TH4 are required to identify its optimal useage relative to the chemotherapy agent.

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SELECTED PREBIOTICS AND THEIR EFFECT ON CHEMOTHERAPY-INDUCED SMALL BOWEL INJURY

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Objectives: Prebiotics have been shown to improve large bowel health. However, few studies describe prebiotic effects in the small bowel. We investigated three prebiotics in a rat model of mucositis.

Methods: Female Dark Agouti rats were gavaged with 5% fructo-oligosaccharide (FOS), galacto-oligosaccharide (GOS) or mannan-oligosaccharide (MOS) for 16 days, and received an injection of 5-Fluorouracil (5-FU), on day 13. Metabolic data and stool consistency scores (SCS) were recorded and organ weights and lengths analysed post-mortem. Histological (crypt depth, villus height, severity scoring) and biochemical (sucrase and myeloperoxidase [MPO] levels) parameters were examined. Statistical analysis was by one-way ANOVA, with $p<0.05$ considered significant.

Results: Histological severity scoring indicated significant damage in 5-FU-treated rats compared to healthy controls. FOS and GOS increased SCS from day −11 to −5, although total faecal output remained unaffected for the duration of the trial. GOS decreased feed intake prior to 5-FU compared to controls. Small intestinal weights and lengths were decreased in all 5-FU treated rats compared to normal controls. FOS increased caecum weight 5-FU-injected rats, compared to saline controls. 5-FU increased MPO activity in the jejunum and ileum, relative to saline- controls. supported by a reduction in villus height and crypt depth in both the jejunum and ileum.

Conclusions: FOS, GOS and MOS did not significantly affect any of the metabolic, biochemical or histological parameters associated with chemotherapy-induced mucositis. Further studies should investigate alternative prebiotic dosing and ingestion periods.

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PREVALENCE AND PREDICTORS OF LOW VITAMIN D LEVELS IN CANCER PATIENTS COMMENCING CHEMOTHERAPY

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Background: Cancer and its treatment may impact on vitamin D status. Low vitamin D levels may be associated with poor cancer prognosis and bone loss. Currently vitamin D status is not routinely assessed.

Objectives: To determine the prevalence of Vitamin D deficiency (≤25 nmol/L (25(OH)D) and insufficiency (26-50 nmol/L) in cancer patients commencing chemotherapy and examine predictors of low Vitamin D status.

Methods: This observational cohort study in cancer patients commencing chemotherapy determines associations between vitamin D status: and weight; BMI; nutritional status; biochemical parameters; dietary intake; and solar exposure.

Results: 64 patients were recruited (28 with Breast/ovarian cancer (44%); 14 lymphoma (14%); 12 colorectal (19%); 5 Lung (8%); and 5 other cancers (15%). The majority were female (n=39 (61%)); mean age 57 yrs±12.4; mean weight 79 kg±20; and mean BMI 27.5 kg/m^2±5.7.

Over half (59%) of patients had inadequate Vitamin D levels (mean 25(OH)D=45.0 nmol/L±19.6 (10.5-89.6), 19% deficient (n=12) and 41% insufficient (n=26). Mean vitamin D levels were higher in summer (53.3 nmol/L± 16.7) than in winter (38.7 nmol/L±19.3)($p=0.02$). There was a small positive association between low vitamin D levels and serum creatinine ($r=0.249$, $p=0.047$). There were no associations between vitamin D status and other variables.

Conclusions: More than half of cancer patients had low vitamin D levels pre chemotherapy. Further research is required to determine the impact of chemotherapy on vitamin D status over time and whether or not vitamin D supplementation improves serum levels and health outcomes.

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EMU OIL PROMOTES REPAIR FROM CHEMOTHERAPY-INDUCED INTESTINAL MUCOSITIS IN RATS

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Objectives: Mucositis resulting from cancer chemotherapy is characterised by intestinal inflammation and ulceration. In a previous study, Emu Oil (EO) gave indications of improved intestinal repair (Br J Nutr, 2010). We investigated EO further for its potential to promote recovery from chemotherapy-induced mucositis in rats.
Methods: Rats (n=8/group) were gavaged with water, Olive Oil (OO) or EO for 10 days and injected with 5-Fluorouracil (5-FU) or saline, on day five. Metabolic parameters, organ weights and lengths and histological measurements were assessed. $P<0.05$ was considered significant.
Results: 5-FU decreased body weight and food intake compared with healthy rats ($P<0.05$). Total water intake and urine output during the post 5-FU period (days 5–10) were decreased by EO in 5-FU-injected rats and EO increased colon weight and small intestinal weight and length compared to 5-FU controls. EO significantly lengthened crypts in normal rats (122±2 μm) compared with healthy controls (112±2 μm; $P<0.05$). Crypts were significantly lengthened in all 5-FU-injected groups compared to healthy controls. However, in 5-FU-injected rats, crypt depth was significantly greater following OO- (144±2 μm) and EO-treatment (150±2 μm) compared with 5-FU control (127±1 μm; $P<0.05$). Both OO and EO significantly lengthened villi in healthy (511±6 μm and 543±6 μm, respectively) and 5-FU treated rats (OO:509±5 μm;EO:562±5 μm) compared with controls (Saline:474±10 μm;5-FU:484±4 μm). EO increased villus length compared to OO in both normal and 5-FU-injected rats ($P<0.05$).
Conclusions: Promotion of repair from injury could represent a new mechanism of action for Emu Oil, suggesting potential as an adjunct to conventional treatment approaches for cancer management.

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OCCURRENCE OF WEIGHT GAIN WITH 5 FLUOUROURACIL AND OXALIPLATIN BASED CHEMOTHERAPY FOR COLON CANCER

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Background: High Body Mass Index (BMI) has been associated with a higher rate of recurrence in patients with colon cancer in some studies. In this study we assessed weight gain following chemotherapy containing 5 Fluorouracil, leucovorin and oxaliplatin.
Methods: This was a retrospective observational study at our institution. 25 patients who presented with stage II/III or metastatic colon cancer were assessed for weight gain during and at six months after completion of 5 FU and oxaliplatin based chemotherapy. Weight gain of more than 10 percent at 6 months after therapy completion compared to the pre-treatment baseline weight was considered a significant weight gain.
Results: 15 of 25 patients were noted to have significant weight gain at 6 months after completion of treatment. The average weight gain was about 8.9 kilos. The average increase in BMI in patients with more than 10% weight gain was from 26 to 28.
Conclusion: Weight gain in patients with colon cancer may be associated with a higher risk of recurrence. We observed that 60% of patients who received 5 FU and oxaliplatin based chemotherapy for colon cancer had significant weight gain. To our knowledge this association has not been previously explored. Our study is retrospective and is limited by small number of patients. However, this observation may have a significant impact on patient outcomes and should be explored in larger studies.

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DEATH IN MEDICINE: WHAT CAN WE LEARN FROM THE EXPERIENCES OF MEDICAL ONCOLOGISTS?

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Objective: Despite advances in medical oncology, and improved survival rates for cancer patients, death still occurs. Little has been reported about the psychological impact on and coping strategies of medical practitioners experiencing the death of patients. This study explored how medical oncologists deal with the death and dying of their patients.
Method: The preliminary results presented here are part of a wider qualitative study, which explored the differences and similarities in the experiences of Australian doctors from four different medical specialties. In-depth, one-to-one interviews were undertaken and sampling ceased at data saturation. A Thematic Analysis of interview data will be conducted.

Results: A total of 11 oncologists were interviewed. Data reached saturation, meaning that no new themes emerged by the final interview. Preliminary thematic content includes: Long-term relationships with patients; Emotional involvement; Breaking bad news; Emotional impact of patient death on the oncologists; and display of grief by doctors to others. A further theme, pertinent to Medical education, appears to involve minimal exposure and preparation for dealing with dying patients throughout training, including specialist training.
Conclusions: Preliminary results and themes identified in this research will shed light on the challenges that medical oncologists face when life cannot be prolonged and how these could be overcome with implementations in medical curricula. Implications for self-care and care of patients and their families are also discussed.

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ANALYSIS OF CISPLATIN-INDUCED EMESIS IN RATS USING AN AUTOMATIC FEEDING MONITORING SYSTEM

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Introduction: Rats, the most common laboratory animal species, are assumed to be unsuitable for the assessment of the antiemetic efficacy of drugs, because they do not vomit. We have reported pica, the consumption of non-food materials like kaolin, in rats may correlate emesis in human. To determine the exact amount of kaolin intake, we recently developed an automatic kaolin intake monitoring system. In the present study, we investigated the time-course profile of cisplatin-induced pica using this system and examined the effect of granisetron (5-HT_3 receptor antagonist) and aprepitant (NK_1 receptor antagonist) on the behavior.
Methods: Rats were housed in individual monitoring cages (FW700SW; Melquest) and adapted to the experimental environment for 5 days. Rats received injection of cisplatin (6 mg/kg, i.p.) with or without granisetron (0.1 mg/kg, i.p. s.i.d. 5 days) or aprepitant (2 mg/kg, i.g. s.i.d. 5 days), then their kaolin intake was monitored hourly for 5 days.
Results: Cisplatin induced pica within 4 hours of the administration and the pica continuously lasted for 5 days. The acute phase (Day1) of pica was effectively inhibited by granisetron. Granisetron prolonged the latency of pica during the delayed phase (Day2-Day5), but, it was ineffective to suppress the delayed phase pica. On the other hand, treatment with aprepitant completely abolished the both phase of pica.
Discussion: These results suggested the profiles of pica are similar to the clinical evidence of cisplatin-induced emesis in human patients and this monitoring system is useful to analyze the antiemetic potential of drugs in preclinical studies.

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COST-EFFECTIVENESS OF APREPITANT REGIMEN TO PREVENT CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV) IN PATIENTS RECEIVING HIGHLY EMETOGENIC CHEMOTHERAPY (HEC) IN SINGAPORE

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Introduction: Cost-effectiveness analyses are increasingly used to inform decision-making related to access to newer medicines.
Objectives: To evaluate the cost-effectiveness of a regimen of aprepitant, in combination with dexamethasone and a 5HT3 antagonist, compared with a standard regimen without aprepitant in patients receiving cisplatin or AC (anthryacycline/cyclophosphamide)-based chemotherapy regimens following cycle one.
Methods: A decision-analytic model compared an aprepitant regimen to a standard regimen within cisplatin-treated and AC-treated patients over five days following chemotherapy. The standard regimen consisted of a 5HT3 antagonist administered on day 1 (cisplatin) and on days 1–3 (AC). CINV outcomes and resource utilization (rescue medications, hospitalizations, and outpatient) were obtained from double-blind randomized trials for cisplatin and AC analyses, respectively. Resources were assigned Singapore unit costs (1 S$=0.78 US$).
Results: For cisplatin-treated patients, complete response (CR) was observed in 68.0% and 48.0% in the aprepitant and control groups (difference = 20%; $p<0.001$), while CR was observed in 62.8% and 47.1% for aprepitant and control groups in AC patients (difference = 15.7%; $p<0.05$). Cisplatin-treated patients gained 0.63 healthy-day equivalents (HDE) with aprepitant, while AC-treated patients gained 0.45 HDEs. In cisplatin patients, 16% (S$13 of S$96) of higher antiemetic prophylaxis costs in the aprepitant regimen were offset by reduced healthcare resource utilization. For AC-treated patients, approximately

two-thirds (S$49 of S$75) of costs were offset. The incremental cost per QALY was S$48,438 for cisplatin-treated and S$21,421for AC-treated patients.

Conclusions: An aprepitant regimen represents a cost-effective use of healthcare resources among HEC treated patients in Singapore.

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CHANGES IN LIMB COMPOSITION ASSOCIATED WITH SECONDARY LYMPHOEDEMA

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Objectives: It is conjectured that, with time, stagnant fluid of secondary lymphoedema becomes fatty and fibrotic preventing treatment to reduce the size of the limb from being effective. Furthermore, the extra mass of fat may lead to increases in lean tissue in the affected arm due to compensatory hypertrophy. The aim of this study was to investigate changes in tissue composition associated with secondary upper limb lymphoedema using dual energy x-ray absorptiometry (DXA).

Methods: Women with and without lymphoedema secondary to breast cancer underwent a whole body DXA (Hologic QDR-4500) allowing arm tissue composition to be determined. The women with lymphoedema had varying degrees of severity.

Results: Arm composition in the control group (n=46) revealed significant interaction between dominance and tissue, with more lean tissue in the dominant arm and more fat in the non-dominant arm ($P<.001$). Those with lymphoedema in their dominant arms (n=13) had more lean tissue in their affected side ($P=0.001$) but similar quantities of fat bilaterally ($P=0.471$). Women with lymphoedema in their non-dominant arm (n=12) had more fat in their affected arm ($P<0.001$) with similar quantities of lean tissue bilaterally ($P=0.142$). The ratio of fat to lean tissue in the lymphadematous side differed from the corresponding control side (dominant affected $P=0.017$; non-dominant affected $P=0.002$).

Conclusion: Compared with normal participants, women with mild to moderate secondary lymphoedema have an increase in fat and lean tissue in their affected limb irrespective of dominance. These findings compliment previous ones seen in women with severe secondary lymphoedema.

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CARING NEEDS AND PREPAREDNESS OF ADOLESCENT PATIENTS DURING UNDERGOING CHEMOTHERAPY

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Adolescents are faced with many changes during the transition from childhood to adult, which requires changes in several factors. It is even more difficult during transition period when adolescents have to face the life threatening illness and receiving chemotherapy. This may affect the development coping and transitional health. The objective of this study was to study caring needs and preparedness of adolescent patients during undergoing chemotherapy. Qualitative data was obtained by in-dept interview of 10 adolescent patients receiving chemotherapy, age 10–15 years, admitted in pediatric nursing department, Siriraj hospital, Faculty of medicine, Mahidol University. Data was analyzed by content analysis.

The result of this study was shown that the caring needs includes three parts:

1) help and support
2) information and
3) participation in care.

Support came from both family members and health care team. Emotional support and support for their daily activities were needed from their families. Additionally, diminishing physiological suffering, managing milieu, and supporting feelings were need that they require from health care professionals. Related to information need, information, including plan of care or treatment, results of care, events happening during course of care, and any possible treatment and operation. The final care need is having a chance to participate in care.

The study results provides health care providers information in order to pay attention in the care needs and preparedness in receiving chemotherapy among adolescents during transition period and further develop the program in providing care to meet the patients' needs.

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IS IT USEFUL TO CALCULATE SUM SCORES OF THE EORTC QLQ-C30?

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Objectives: The quality of life questionnaire EORTC QLQ-C30 comprises five functioning scales, nine symptom scales resp. symptom items and a two-item scale for global quality of life. The aim is to test the usefulness of the construction of summarizing sum scales.
Methods: Cancer patients (N=1529) were asked to fill in the EORTC QLQ-C30 and several other questionnaires. The five functioning scales were summarized into a sum scale (range 0–100), and the same was done for the symptom scales (all symptoms except financial difficulties). Finally, a total score was calculated.
Results: The reliability coefficients (Cronbach's alpha) for the newly defined sum scales are good, the scores range from 0.87 to 0.93. The criterion-based validity (comparison between the cancer patients and a sample of 2037 subjects from the general population) is higher for the new sum scales (Cohen's d between 0.93 and 1.12) than the validity of the 2-item scale of global quality of life (d=0.72).
Conclusion: It is useful to calculate such summarizing scores for this questionnaire. Details of the calculation (e. g., summarizing across items or across subscales; inclusion of the item financial difficulties, possible exclusion of further items, and weighting of items or subscales) need further discussion in order to approach to a generally accepted definition of sum scores.

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UNMET SUPPORTIVE CARE NEEDS AMONG ASIAN CASTRATE RESISTANT PROSTATE CANCERS (CPRC) PATIENTS

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Objectives: Various treatment options are available for patients manifesting castrate resistant prostate cancers (CRPC), and these options are highly dependent upon their disease stage, age and presence of comorbidities. However, these treatments typically induce severe side effects and often require dedicated supportive care management. Hence, this study was conducted to evaluate the prevalence of unmet supportive care needs among CRPC patients who were receiving pharmacological treatments.
Methods: This was a single centre, retrospective, drug utilization study conducted in Singapore. All CRPC patients receiving pharmacological treatment between January 2007 and December 2009 were recruited in this study.
Results: Seventy-seven patients were eligible for analysis. Majority were Chinese, and median age was 70 years old (55–84). Fifty-six (72%) patients had concomitant diseases including hypertension (63%), diabetes (29%), dyslipidemia (34%) and thromboembolic diseases (8%). The median number of medications for each patient was 5 (1–9). In terms of CPRC treatment, majority of the patients received ketoconazole (87%), docetaxel (29%) and diethylstilbestrol (24%). Eighteen patients (23%) experienced drug induced complications and required supportive care interventions; significant complications included poor glycemic control (9%), neutropenic fever/sepsis (7%), new onset of thromboembolic events (3%), supratherapeutic INR which required warfarin dose adjustments (3%), and reversible transaminitis (3%).
Conclusions: A high (23%) proportion of CPRC patients receiving pharmacological therapies suffered from drug induced complications and required supportive care interventions. There is a strong need to improve unmet supportive care needs in this population.

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VALIDATION OF NATIONAL COMPREHENSIVE CANCER NETWORK (NCCN) GUIDELINE FOR CANCER PAIN CONTROL

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Pain is one of the most common symptoms associated with cancer. Pain management is an integral part of the oncology, and the NCCN adult pain panel developed clinical practice guideline. The purpose of this study was to validate NCCN guideline for cancer pain control. Three hundred and seventy-six patients with various cancer types were enrolled. They were treated with oral, patch or intravenous injection of opioid according to NCCN guideline. The primary outcome of interest was degree of pain relief; secondary endpoint was time interval from severe/moderate pain to NRS 2. Initial median intensity of pain was NRS 4.23, Patients with moderate to severe pain was 54%. Pain intensity was decreased from 4.23 to NRS 1.94 after treatment. Patients with moderate to severe pain were also decreased from 54% to 10%. Patients who controlled to NRS 2 within one week were 65%. When we compare patients treated according to NCCN guideline with control patients, patients with adherence to guideline were better controlled. Time interval to NRS 2 was significantly shorter (2.7 days vs. 3.8 days, p=0.02), and rate to NRS 2 was higher than control patients (80% vs. 45%, p=0.001).

These findings suggest that following NCCN guideline is effective way to cancer pain control.

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AGE DIFFERENCES OF ANXIETY AND DEPRESSION IN GERMAN CANCER PATIENTS, COMPARED WITH THE GENERAL POPULATION

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Objectives: The aim of this study was to analyze the effects of age, cancer localization and tumor stage on anxiety and depression in tumor patients.
Methods: The study comprised a sample of 1529 cancer patients during their stay in the hospital and 2037 subjects of the German general population. Mental distress was assessed with the Hospital Anxiety and Depression Scale (HADS).
Results: While there is a nearly linear age trend of anxiety and depression with highest mean score for old persons in the general population, this trend does not occur in cancer patients. Old patients are less affected than patients with medium age. Females with breast cancer, gynecological cancer, lung cancer and brain cancer show the highest mean scores of anxiety and depression. Among males, the differences are less pronounced, with least anxiety and depression scores for prostate cancer patients. Patients with tumor stage I and particularly with stage IV show the highest prevalence rates of exaggerated anxiety and depression.
Conclusion: Compared to the general population, young cancer patients are especially affected by anxiety and depression. Age and gender should be taken into account when samples of cancer patients are compared with one another.

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PREVALENCE, INTENSITY AND IMPACT OF DYSPNEA IN CANCER PATIENTS TREATED AT THE GENERAL HOSPITAL IN SERBIA

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Dyspnea is a common symptom experienced by cancer patients.

The aim of our study was to perform an evaluation of dyspnea in the population of cancer patients treated at the general hospital. During 2010, 100 consecutive cancer patients were evaluated with the goal to determine: a) the prevalence and the intensity of dyspnea (by Modified Borg 0–10 Scale, MBS), the impact of dyspnea on daily activities (by modified Medical Research Council 0–4 questionnaire, MRC), and the effect of dyspnea on quality of life (QoL, by 0–10 scale, 0: does not interfere, 10: completely interferes) Of 100 consecutive cancer patients included, 55% were in advanced stage of disease, 69% had a diagnosis of lung cancer, and 26% had lung metastases. Dyspnea was reported by 71% of patients: 15/71 (21.13%) reported maximum moderate dyspnea (0–3 MBS), 29 (40.85%) reported somewhat severe to very severe dyspnea (4–7 MBS), while 27 (38.02%) reported almost maximal and maximal dyspnea (8–10 MBS). Significant impact on daily activities was reported by 48/71 (67.60%) with dyspnea (grade 2, 3 and 4 MRC reported by 18, 15 and 15 patients respectively). The effect of dyspnea on QoL was selected as ≥7/10 in 35/71 patients (49.25%) and 14/71 (19.7%) reported that dyspnea completely interferes with their QoL. Only 8/71 patients with dyspnea received morphine, which was however prescribed for the treatment of pain. For all patients evaluated this was the first assessment of dyspnea.
Dyspnea was common and distressing symptom in the evaluated population of cancer patients.

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EFFECTS OF GLYCINE SUPPLEMENTATION ON WEIGHT VARIATIONS OF 5-FLUOROURACIL INDUCED-ORAL MUCOSITIS IN HAMSTER

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Objective: Glycine is a potent amino acid that modulates synthesis of protein and skeletal muscle degradation. The present study aimed to evaluate the effects of glycine supplementation on weight after the 5-fluorouracil induced-oral mucositis in hamster.
Methods: Animals of both experimental (group I; n=20) and positive control (group II; n=20) groups received intraperito-

neal injections of 5-fluorouracil on days 1 and 3. All animals had their left cheek pouch irritated by superficial scratching on day 4. Group I, submitted to induced oral mucositis, was treated with 5% glycine intraperitoneal infusion during seven current days. In group II, mucositis was induced, but non-treated. The hamsters were weighed daily and sacrificed on day 7.

Results: The clinical stages of oral mucositis in an animal model were well established. The development of ulcerative mucositis was consistent and standardized in both groups. Comparing the animals in the group I(GI) (98.8 g +/− 0.5) to controls (95.9 +/− 0.6) with $P>0.05$.

Conclusion: The results suggest that glycine supplementation don't provided statistically significant weight changes between groups.

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MOOD DISORDERS IN CANCER PATIENTS: PRELIMINARY RESULTS OF AN OBSERVATIONAL STUDY

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Objectives: Psychiatric disorders affect up to 50% of cancer patients: mood disorders being those reported most frequently. Mood disorders are not routinely assessed and difficult to evaluate in the cancer population because of confounding variables: concomitant stressful events, pain, fatigue etc. Nevertheless their impact on patient's quality of life, treatment's compliance, duration and costs of hospitalization is relevant. To evaluate frequency and time course of mental disorders and to identify the most valuable symptoms in the diagnosis of mood disorders in cancer patients, we performed an observational study.

Methods: Two battery of tests to collect information on neuropsychological (MMSE; Rey auditory verbal learning; Rey complex figure; Progressive Raven's Matrixes; Stroop; WCST; FVF. and psychopathological (SCIDII; HDRS; HAMA; SQ; TAS-20; ISS; SSI; QL-INDEX; CIRS; STAI-Y 1/STAY-Y2; FS.) status.

Results: 162 pts were recruited in 5 Centres. 35 are males, 127 females. Mean age is 52 (r. 21–83). 44 ovarian cancer, 30 colon-rectum, 43 breast, 17 lung, 18 uterine, 10 other neoplasm were observed. 86 patients present advanced disease (stage III-IV). 134 patients were receiving chemotherapy (adjuv/metast, 63/71), 28 other therapy. Depressive disorder were observed in 48 (29,6%) pts and generalized anxiety disorder in 50 (30,8%). 3 (6,25%) pts were treated for depression and 11 (22%) for anxiety at the time of interview.

Conclusions: Mood disorders are frequent in cancer patients and poorly recognized. Information programs and specific training are needed to improve the awareness of clinical oncologists and the management of mood disorders in cancer patients.

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STARTING SPECIALIST PALLIATIVE CARE FOR CHILDREN IN RUSSIA: WHERE WE ARE

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Background: Annually around 4.5 thousand new cancer cases are registered in children and adolescents in Russia. Pediatric palliative care is an emerging subspecialty that focuses on achieving the best possible quality of life for children with cancer and their families. The aim of the study was to take the first attempt to describe palliative care for children with cancer in Russia and perspectives for its development.

Methods: We adopt a multimethod approach, which involves the synthesis of evidence from published literature, the Internet resources, local experts interviews and personal communication.

Results: We found cancer hospice services in 5 cities within the country. They are represented by small hospices; home teams or wards in adults' hospices. Generally palliative care is provided by specialists in diverse pediatric clinical settings. The first hospice for children with cancer has been set up recently in St. Petersburg. There are a lot of NGOs and public initiatives that support medical care for and social well-being of children with cancer all over the country

Conclusion: The data were analyzed using the typology's key elements and the country was allocated to the category: *Capacity building activity* (M. Wright et all, 2007). There is evidence of wide-ranging initiatives designed to create the organizational, workforce, and policy capacity for hospice-palliative care services for children to develop. Activities include: attendance at, or organization of, key conferences; personnel undertaking external training in palliative care; lobbying of policy-makers and health ministries; and an incipient service development, usually building on existing home care programs.

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THE TYPES OF HOPE IN THE HOSPITALIZED TERMINAL CANCER PATIENTS

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Background: There have been few studies found in the literature identifying types of hope experienced by hospitalized people in hospice care setting.
Objectives: The aim of this study was to discover their types of hope in hospitalized terminal cancer patients and to identify the major threads in various patterns of hope experienced by them.
Design: *Q*-methodology, which is an approach designed to discover types in various subjective experiences, was used as the method for the study. *Q*-methodology involves five steps in its approach, the first two (obtaining Q-population, Q-sampling)as the first phase and the last three(participants sampling, Q-sorting, and Q-factor analysis) as the second phase. The study was carried out at the hospice wards in two tertiary hospitals located in Daejeon city in South Korea. The study obtained data from a convenient sample of 32 terminal cancer patients in hospice wards for the first phase, and a different convenient sample of 21 hospice cared terminal cancer patients in hospital for the second phase.
Results and conclusions: Five types of subjective experiences of hope discovered as:
(a) internal evidence seeking orientation,
(b) self possibility seeking orientation,
(c) realistic evidence seeking orientation,
(d) Pragmatic thinking orientation, and
(e) external dependence orientation.
This suggests that hospice cared terminal cancer patients in hospital experience hope in various ways with different meanings and individualized hope promoting interventions be required for them.

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THROMBOEMBOLIC RISK RELATED TO TYPE OF CHEMOTHERAPY AND EFFICACY OF NADROPARIN IN CANCER OUTPATIENTS WITH METASTATIC OR LOCALLY ADVANCED CANCER

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Objectives: Nadroparin has been demonstrated to reduce the incidence of venous and arterial thrombotic events (TEs) by about 50% in outpatients with metastatic or locally advanced cancer receiving chemotherapy (NCT 00951574). The aim of this post-hoc analysis was to evaluate the thromboembolic risk and the benefit of nadroparin prophylaxis in relationship to type of chemotherapy.
Methods: Cancer outpatients were randomly assigned in a double-blind manner to receive subcutaneous injections of nadroparin (3800 IU anti-Xa once a day) or placebo. The incidence of symptomatic TEs was assessed according to the type of chemotherapy. Results were reported as risk ratios with associated 95% CI and two-tailed probability values.
Results: The two treatment groups were well balanced for demographic characteristics, cancer site, concomitant medication and chemotherapy regimen. In the absence of thromboprophylaxis (placebo), the highest rate of TEs was found in patients receiving gemcitabine (8.1%) and cisplatin (7.0%). Nadroparin prophylaxis reduced the risk of developing a TE in all chemotherapy regimens; in particular in regimens containing gemcitabine by 68%, with a further decrease to 78% in combination with either cisplatin or carboplatin.
Conclusion: This post hoc analysis suggests that the clinical benefits of thromboprophylaxis with nadroparin are enhanced in patients receiving cisplatin, carboplatin, gemcitabine and their combination.

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PREDICTION OF VENOUS THROMBOEMBOLISM IN AMBULATORY CANCER PATIENTS RECEIVING CHEMOTHERAPY: THE PROTECHT THROMBOEMBOLIC RISK SCORE MODEL

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Objectives: Cancer patients receiving cisplatin, carboplatin or gemcitabine and their combination have the highest risk of TEs. Khorana and colleagues have validated a score (KS) to identify the risk of TEs in cancer patients, according to five variables (site of cancer, platelet count, haemoglobin level, leukocyte count and body mass index). Patients with a score ≥3 are at high risk to develop TEs.

Methods: In our analysis we incorporated the chemotherapy variable in KS: for patients receiving cisplatin or carboplatin or gemcitabine 1 point has been added to the score; while regimen containing platinum compound plus gemcitabine 2 points. The aim of this post-hoc analysis was to evaluate the ability of this PROTECHT risk score (PrKS) to identify high risk patients among the PROTECHT trial (NCT 00951574) population. A receiver operating characteristic (ROC) curve has been used to assess the accuracy of both scores.
Results: Among the 1150 evaluable patients: 381 were allocated in the placebo arm and for 378 of them an evaluation of both scores has been performed: 11.1% and 32.8% were at high risk of TEs in the KS and PrKS, respectively. In the study population a total of 15 TEs has been reported: 33.3% and 66.7% of TEs occurred in the high risk patients according to KS and PrKS, respectively. The Area under the ROC Curve was larger with PrKS in comparison with KS (0.70 and 0.65 respectively).
Conclusion: PrKS could have a higher predictability to identify high risk patients for TEs compared to KS.

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ORAL BACTERIAL LOAD AND PERIODONTAL PATHOGENS IN RELATIONSHIP TO ULCERATIVE ORAL MUCOSITIS IN HEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS

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Objectives: Oral mucositis is a debilitating side effect of hematopoietic stem cell transplantation (HSCT). Periodontitis and poor oral hygiene are considered to be risk factors for oral mucositis, but information on the contribution of periodontal pathogens to the development and severity of oral mucositis is scarce. Therefore, this study was aimed at determining the possible relationship between periodontal pathogens and ulcerative oral mucositis.
Methods: This prospective observational study included 49 adult HSCT recipients. Twenty-six patients received myeloablative conditioning (cyclophoshamide+/−total body irradiation), while 23 received non-myeloablative conditioning (fludarabine, busulphan, antithymocyte-globulin). All patients received selective digestive tract decontamination to eradicate gram-negative aerobes. Twice weekly, mucositis was scored using the WHO scale and rinsing samples from the oral cavity were obtained using 10 ml of phosphate buffered saline. DNA was isolated using MagnaPure®. The total bacterial load and periodontal pathogens (*Aggregatibacter actinomycetemcomitans, Porphyromonas gingivalis, Prevotella intermedia, Peptostreptococcus micros, Fusobacterium nucleatum, Tannerella denticola* and *Treponema forsytia*) were determined using real-time PCR with specific primers and probes. Predictors for the presence of oral ulcerations were calculated using the multilevel Generalized Estimated Equations (GEE) technique.
Results: None of the rinsing samples was positive for *A. actinomycetemcomitans*, while *F. nucleatum* was found most often (66% of samples). In the multivariate GEE analyses the total bacterial load, conditioning regimen and the load of P. gingivalis were significant predictors for oral ulceration.
Conclusions: The results of our study suggest that oral hygiene and the periodontal condition are associated with ulcerative oral mucositis in HSCT recipients.

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PALONOSETRON FOR THE PREVENTION OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV) IN HIGH-RISK PATIENTS RECEIVING LOW EMETOGENIC CHEMOTHERAPY (LEC)

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Objectives: Patients receiving LEC have a 10-30% probability of developing CINV without prophylaxis. Palonosetron HCL is a safe, effective antiemetic for patients receiving MEC or HEC, but has not been evaluated in patients receiving LEC.
Methods: A multi-center, single-arm study evaluated palonosetron 0.25 mg in preventing CINV in patients who experienced vomiting and/or at least moderate nausea during their previous LEC cycle. Efficacy and safety—including nausea, retching, and/or vomiting, and rescue medication use—was assessed on Days 1–6 in patient diaries. Primary outcome was complete response (CR)—defined as no emetic episode and no rescue medication for 0–24 hrs (acute), >24–120 hrs (delayed), and 0–120 hrs (overall).
Results: Of 36 enrolled patients, 35 completed the study. Patients characteristics: female (25, 69.4%), Caucasian (30, 83.3%), mean aged 65.0±13.3 yrs, and Karnofsky Performance Status of 82.8±13.9. One patient did not complete verifiable efficacy assessments, with efficacy analysis based

on 34 patients. Complete response was demonstrated in 30 patients (88.2%) during the acute period, with no emetic episodes in 31 patients (91.2%). For delayed and overall periods, 23 patients (67.6%) demonstrated CR, with no emetic episodes in 27 patients (79.4%). Adverse events (AEs) were seen in 13 patients (36.1%) and treatment-emergent AEs in 12 patients (33.3%)—including decreased appetite, fatigue, headache, and pyrexia (each 2 patients, 5.6%).

Conclusions: Palonosetron provided improved CINV prophylaxis in acute (88% CR) and overall (68% CR) periods for patients who experienced CINV with prior LEC therapy, with a safety profile similar to previous palonosetron trials.

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ANALYSIS OF PHASE III STUDIES FOR PALONOSETRON, ONDANSETRON, DOLASETRON, AND GRANISETRON IN THE PREVENTION OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV)

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Objectives: Controlling CINV is integral to treatment success in cancer patients. Palonosetron HCl is a potent 5-HT_3 receptor antagonist ($5HT_3$-RA) with a longer $t_{1/2}$ and distinctly different receptor binding profile compared to 1st generation $5HT_3$-RAs.

Methods: We conducted an analysis of 4 phase III studies to compare palonosetron to 1st generation $5HT_3$-RAs in the prevention of CINV. Pooled patient-level data were used in a logistical regression model, with the primary outcome variable being complete response (CR) for 0–24 hrs (acute), >24–120 hrs (delayed), and 0–120 hrs (overall). A comparative safety assessment was also conducted.

Results: The analysis included 2969 patients-palonosetron 0.25 mg, n=609; palonosetron 0.75 mg, n=1182; and 1st generation $5HT_3$-RA, n=1178. Significantly higher CR rates were demonstrated for all palonosetron doses vs. 1st generation $5HT_3$-RA during the acute phase, (OR=0.89; $p<0.01$); delayed phase, (OR=0.81, $p<0.0001$); and overall phase, (OR=0.81, $p<0.0001$).The adverse event (AE) profile of palonosetron (all doses) was similar to 1st generation $5HT_3$-RA across all trials. The incidence of treatment-related AEs was similar across trials; palonosetron 0.25 mg, up to 20.5%; palonosetron 0.75 mg, up to 28.8%; and 1st generation $5HT_3$-RA, up to 32.2%, with notable TEAEs including constipation (up to 4.5%; up to 16.6%; and up to 15.4%, respectively) and headache (up to 9.7%; up to 12.4%; and up to 11.0%, respectively).

Conclusions: This analysis demonstrated a similar safety profile and significantly improved CINV prophylaxis in the acute, delayed, and overall phase for palonosetron compared to 1st generation $5HT_3$-RA.

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ANEMIA MANAGEMENT IN CANCER PATIENTS

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Objective: The patients suffering a tumor have anemies caused by malnutrition, poor absortion and iron transfer and also caused by chiomiotherapy that use Cisplatinum and derived products.The anemy causes delays in the chemiotherapy and affects the treatment's results. The current treatment of anemia has high social costs, including growing erythropoietins,iron therapy and transfusions. We have looked at the best supporting care setting as a primary goal the improvement of the QoL and secondary goals the reduced employment of growing erythropoietin factors and transfusions. The Lactoferrin (LF) has resulted adequate for its characteristics of tying ion ferric (Fe^{3+}) twice as much of transferrina, the principal plasmatic protein. Items: In our study and observations the treatment's effectiveness has been measured on 104 patients that received chemiotherapy. We have evaluated the fatigue with the FSS (fatigue severity scale) measured by TO and T1 after 3 months and T2 at the treatment's end; all patients with anemia received a supplement of lactoferrin of 200 mg/os/die for two weeks and then 100 mg per day.

Results: The fatigue's frequency in TO was about 80% of patients (83/104) reducing at T1 to 30% and reaching 20% at T2, and we also observed an improvement of anemia without collateral effects.

Conclusions: The objective of the study have been met and the use of LF in patients suffering cancer results in clinical and quality of life improvments with costs reduction and real economic savings.

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NURSING INTERVENTION FOR THE PREVENTION AND REDUCTION OF ORAL MUCOSITIS

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Objective: This quality improvement process aimed to find a proper oral care protocol to prevent and decrease the severity of oral mucositis following chemotherapy in cancer patients who were admitted to the Private Patient Unit, Siriraj Hospital.
Method: Literature reviews were conducted using the PICO Framework. The levels of evidence also were rated based on Melynk and Fineout's criteria. Nine studies were chosen, analyzed, and synthesized to develop an oral care protocol, which was later used for 3 months in 20 cancer patients admitted to the unit to examine its effectiveness. Data were collected using a demographic questionnaire, The WHO Oral Toxicity Scale and The Patient Satisfaction Assessment.
Results: Over half the patients had colorectal and nasopharyngeal cancer, 45% and 14%, respectively. The two most frequently-used chemotherapy drugs were 5-FU (54.61%) and Doxorubicin (19.23%). The grading of oral mucositis in patients who enrolled in this project was 0–2. That meaned the patients could eat and drink as usual, not much been affect their lifestyle. Overall patient satisfaction was somewhat high (88.73%).
Conclusions: Findings suggested that oral care program and cryotherapy should be included in a protocol used to prevent and decrease the severity of mucositis following chemotherapy. Nurses should instruct cancer patients how to care for and to daily assess their oral cavities.

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WHAT IS THE EVIDENCE FOR NON-PHARMACOLOGICAL INTERVENTIONS TO RELIEVE JOINT PAIN IN NON-CANCER CONDITIONS? A REVIEW OF THE LITERATURE

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Introduction: Women who have been treated for breast cancer are at risk of developing increased joint or muscle pain and stiffness associated with adjuvant breast cancer treatment and hormone therapies, such as the aromatase inhibitors, in particular. These problems may be sufficiently severe to require a change or early cessation of adjuvant treatment which may have an impact on survival rates. Appropriate and acceptable interventions are required to address this problem.
Objective: This review of the literature was conducted to identify effective interventions currently used in arthritis which could be tested in women with breast cancer related arthralgia.
Methods: A systematic review was conducted to explore primary research and literature reviews of non-pharmacological interventions for the relief of joint and muscle pain in non cancer conditions, such as osteo and rheumatoid arthritis. This included physical and complementary therapies, but excluded prescribed or over the counter medications, vitamins and herbal remedies.
Results: 3 studies, 18 literature reviews and 2 meta-analyses were found which met the inclusion criteria. The quality of evidence to support the use of non-pharmacological interventions for the relief of joint and muscle pain was poor. There was some evidence to support the use of exercise, localised heat treatments, acupuncture and low level laser therapy, although further research is recommended in all of these interventions.
Conclusions: The lack of quality evidence highlights the need for large, well-designed studies of non-pharmacological interventions for both cancer and non-cancer related joint and muscle pain.

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ZOLEDRONIC ACID AS A SUPPORTIVE THERAPY ACROSS ALL METASTATIC UROLOGICAL CANCERS

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Introduction: Bisphosphonate therapy plays an indisputable role in preventing skeletal related events (SRE's) in bone metastasis, reducing onset and rate of occurrence.
Although Bisphosphonates have become a key part of treatment approaches in metastatic prostate cancer, their use in other metastatic urological malignancies is not as wide-spread.
This poster aims to demonstrate the benefit of bisphosphonates use in all urological malignancies.
(Table showing burden of metastases in urological cancers)
Methods: We analysed large published studies to integrate the results into one poster regarding bone mets in urological cancers.
Results:
Bladder: 40 patients randomised into placebo or Zoledronic acid (ZOL) ZOL significantly reduced SREs by 54% v placebo (p=0.001) and time to first onset of SRE (16 v 8 weeks) (p=0.001)
1 year survival rate for ZOL 36.3 +/− 11.2% v 0% for placebo (p=0.004)
Renal: Retrospective analysis of 94 mRCC (n=75 ZOL v n=19 placebo)

74% of patients placebo treated patients experience SREs v 39% with ZOL
ZOL associated with 46% reduction risk of death (median OS 11.4 months ZOL v 7.1 month with placebo (p=0.014)
Prostate: 422 patients randomised ZOL v Placebo. ZOL reduced SRE's by 22% (p=0.028), delays time to first SRE by 167 days (p=0.009) and shows an increase in survival by 29% (p=0.04).
Insert a graph for each disease process showing ZOL v placebo
Conclusion: The use of ZOL has shown to reduce SRE's, reduce time to SRE and improve survival in all urological cancers with bone metastases.

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ONCOLOGY NURSE'S KNOWLEDGE, BELIEF AND ROLE IN LONG-TERM CANCER SURVIVORSHIP IN THE US AND JAPAN

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Purpose: Exanime knowledge, beliefs and role perceptions and behaviors of oncology nurses in the follow up care of patients competing treatment and moving into cancer survivorship phase of life.
Method and analysis: An exploratory design and structured self-administered questionnaire was used. Subjects: 48 nurses of MN Chapter of Onology Nures Society (MONS) and 81 nurses of Japanese Society of Cancer Nurses (JSCN). IRB and Ethical Review Board at both sites approved the study. Data was examined using descriptive content and probability analysis.
Result:
1) Subjects: US nurses were on average 50 years old with over 85% having over 10 years oncology experience where in Japan, nurses were average of 40 years old and just 61% had 10 years oncology experience.
2) Cancer survivorship: defined by 72% nurses in MONS and 76% in JSCN, a cancer patient becomes a survivor at time of diagnosis (X^2=0.21, P=0.64).
3) Education in survivorship: 47% of US and 84% of Japanese subjects reported receiving education in cancer survivorship (X^2=18.8, P<0.0001). Undergraduates in both groups decribed getting their knowledge from continuing education, conferences and journals, while graduate nurses got their knowledge in Masters' programs.
4) Long term survivorship care was explored using 2 case studies. Nurses in the US identified issues of recurrence, sexuality and side effects while nurses in Japan identified symptom management and mental support.
Conclusion: Although not significant, there are unique differences between US and Japanese nurses. This presentation will highlight these differences and insights into cross-cultutal studies.

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DELIRIUM MANAGEMENT IN ONCOLOGY: GUIDELINES FROM THE FRENCH SUPPORTIVE CARE GROUP

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In oncology, delirium represents one of the most common neuropsychiatric emergencies and must be treated by a multidisciplinary team.
Objectives: To update French guidelines for delirium management in the oncologic supportive care setting to facilitate screening and treatment by the oncologic team.
Methods: A multidisciplinary team including Neurologists, Psychiatrists, Gerontologist, Pneumologist, Registered nurses, Methodologist was created to elaborate consensual guidelines regarding recent literature published on this topic and focused on definition, clinical form and prevalence data, most efficient screening instrument, risk factors, prevention, pharmacological and non pharmacologic treatment.
Results: Delirium represents a global brain dysfunction mainly due to somatic causes.
Screening and treatment must be implemented as soon as possible, especially for hypodelirium regarding its adverse outcome and bad prognosis. Predisposing factors are mainly represented by old age, polymedications, dehydration, post surgery and previous episode of delirium. Potential precipitants include medications, metabolic and nutritional impairment, infection and organ failure, intracranial disease (tumoral and vascular), fecaloma and urinary retention. Therefore biological exams are useful completed by MRI scan if necessary and assessment can be done by using the Nursing Delirium Screening Scale (Nu-DESC), validated in French.
Symptomatic and etiological treatment must be implemented together. Haloperidol is considered as the best first- line pharmacological therapy and benzodiazepines should be used with caution. Psychiatric advice is needed in case of unsuccessful management. Environmental procedures and supportive care (debriefing, education, and psychological support) must also be done.

Conclusions: Delirium management can be optimized by a multidisciplinary approach and consensual guidelines delivered to health professionals.

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TESTING THE QUALITY OF SOCIAL NETWORK AND SOCIAL SUPPORT OF WOMEN SUFFERING OF BREAST CANCER: THE ROLE OF FAMILY TIES

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Objectives: This paper is aimed to describe support needs of breast cancer ill women, the network at their disposal, and the psychological effects ensuing from living with cancer. The work emphasizes the role of family members as supporters to point out strengths and weaknesses of this kind of involvement, and to suggest strategies helping families dealing with chronic illness.
Methods: In a case control study we compared breast cancer ill women with healthy women with similar socio-demographic background. Data were analysed using SPSS program (statistical significance $p<0.05$ - 2-tailed). We used ANOVA and t-test for continuous variables, and Chi Square test for categorical variables ($p<0.05$).
Results: Our findings showed that healthy women had wider social networks compared with women with breast cancer (mean number 10.8±5.1 versus 8.0±4.5 for ill women $p<0.001$). Ill women had restricted social networks characterized by a great concentration of support functions in few persons, mainly kins.
Conclusions: Family ties are very important in the early stages of the illness. Thanks to their high density and their possibility to share information quickly, they are very effective to react to the ill person needs. In spite of that, as literature shows, the prolonged effort required by coping with a stressful situation can exceed the compensation capability of the system and lead to maladjustment in family members. To prevent this negative effects it is necessary to consider the family as a part of the oncologic patient management.

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B_2-ADRENOCEPTOR BLOCKAGE INDUCES G_1/S PHASE ARREST AND APOPTOSIS IN PANCREATIC CANCER CELLS VIA RAS/AKT/NFKB PATHWAY

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Objectives: Smoking and stress, PanCa risk factors, stimulate nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) and catecholamines production respectively. Both NNK and catecholamine bind the β-adrenoceptors and induce PanCa cell proliferation. Here, we hypothesize that β_2-adrenergic antagonist ICI118,551 significantly induced G_1/S phase arrest and apoptosis compared with β_1-adrenergic antagonist metoprolol in PanCa cells.
Methods: The expression of the β_1 and β_2-adrenoceptors was analysed by Western blot and Immunohistochemistry. The apoptotic index and cell cycle distribution was determined by the flow cytometry assay. The activation of nuclear factor κB (NFκB) was measured by electrophoretic mobility shift assays. The expression of extracellular signal-regulated kinase, Akt, caspase-3, caspase-9, Bcl-2, Bax, cyclin D1 and E was analysed by Western blot.
Results: The MIA PaCa-2 and BxPC-3 cell lines expressed both β_1 and β_2-adrenoceptor protein. The β_2-adrenergic antagonist ICI118,551 and $\beta_{1/2}$-adrenergic antagonist propranolol significantly induced G_1/S phase arrest and apoptosis compared with the β_1-adrenergic antagonist metoprolol. β-adrenoceptor antagonist therapy affected the expression of extracellular signal-regulated kinase, Akt, caspase-3, caspase-9, Bcl-2, Bax, cyclin D1, and cyclin E and reduced the activation of NFκB.
Conclusions: Blockage of the β_2-adrenoceptor markedly y induced G_1/S phase arrest and apoptosis, and also inhibited NFκB, extracellular signal-regulated kinase, and Akt pathways. Therefore, their upstream molecule Ras may be a key factor in G_1/S phase arrest and apoptosis in PanCa cells. The new pathway discovered in this study may provide an effective therapeutic strategy for pancreatic cancer.

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OPIOID INDUCED HYPOTHALMIC PITUITARY DYSFUNCTION AND IMPROVED QUALITY OF LIFE: A CASE STUDY IN METASTATIC PANCREATIC CANCER

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Objectives:
- To outline the role of endocrine dysfunction in patients using opioids for the treatment of cancer related pain.
- To demonstrate the efficacious role of exogenous endocrine support (Testosterone and Corticosteroid) as part of a palliative treatment plan

Methods: A retrospective case study detailing the experience of a 46 year old man (Mr. F) with metastatic pancreatic cancer will be presented. Details regarding his clinical presentation, laboratory findings, and the benefits realized will be discussed. A descriptive review of the literature outlining the effects of opioid induced impaired endocrine function and the benefits of testosterone and corticosteroid replacement will be presented.

Results: The literature is very convincing regarding hypogonadism caused by chronic opioid therapy. There is however, a dearth of literature substantiating this in the cancer patient population, particularly regarding the clinical effect of treatment. This one case study demonstrates clearly the major benefits that may be derived from endocrine replacement toward improving Quality of Life. Mr. F experienced:
- Increased activity tolerance
- Increased social engagement
- Improved nausea control
- Decreased opioid requirement
- Improved libido and sexual function
- Full independent mobility up until his last 10 days of life

Conclusions: Clearly this 'N of one study' is compelling for further studies on the frequency, severity and effect of hormone replacement for hypogonadism and adrenal insufficiency in patients receiving opioids for cancer related pain.

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ROLE OF PRE-EXISTING DENTAL DISEASE, BISPHOSPHONATE-ASSOCIATED OSTEONECROSIS AND CLINICAL OUTCOMES IN MULTIPLE MYELOMA PATIENTS

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One of the recently reported adverse effects of bisphosphonate (BP) treatment is osteonecrosis of the jaw, a condition first recognized in 2003[1]. Bisphosphonate associated osteonecrosis of the jaw (BON) has a higher incidence in patients (pts) receiving intravenous bisphosphonate particularly with zoledronic acid and pamidronate[2]. This study examined a cohort of Multiple Myeloma(MM) pts. Assessment included demographics, pre-existing dental conditions, level of periodontal disease, MM disease status, medical intervention and mortality.

This cohort included 230 MM pts, 93 females and 137 males. 63% of patients were Caucasian while 35% were African American. 71.3% received BP; including Zometa, Aredia or those having received both. Thirty three patients developed BON (14.3%). We assessed, using logistic regression, if selected dental conditions or various combinations of these pathologies such as; periodontal diseases, periapical pathology, prior root canal therapy (RCT) or oral lytic lesions consistent with MM, affect the risk to develop BON. No association was found between chance to develop BON and RCT/pathology combined status, p=0.54. A positive association was found among periodontal diseases, particularly between severity status (moderate and severe), in pts with generalized periodontal disease and risk to develop BON. The chances to develop BON for pts with moderate periodontal disease was 40% of those with severe status (OR=0.40, 95% CI: 0.15–0.95; p=0/039.) Additionally, dental exam to MM status i.e. relapse, other comorbidities or death was evaluated. This is the first study to link pre-existing dental disease with MM outcomes.

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ACCULTURATION AND BELIEFS ABOUT END-OF-LIFE (EOL) CANCER CARE AMONG INDIVIDUALS OF JAPANESE ANCESTRY LIVING IN AMERICA

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Objectives: To demonstrate differences in the beliefs about EOL cancer care between Japanese Americans (JA) and Japanese (J) living in America.

Methods: Self-administered questionnaires were distributed to JA/J who participated in two social events in New York and West Virginia, and to members of the NY Japanese American Association. Respondents were asked to rate their agreement levels on 5-point Likert-type scales (1=strongly disagree-5=strongly agree) for eight questions previously used in a Japanese nationwide study regarding pain/communication/hydration/nutrition-related beliefs. Kruskal-Wallis tests were used to compare ratings between JA and J.

Results: 366 of 1132 questionnaires were returned (32%). 69 (19%) subjects identified themselves as JA and 297 (81%) as J. Most were ≥60 years old (63%), female (77%), and have lived in America ≥21 years (72%). JA were significantly less likely to believe "pain medications shorten life" (p=0.0034), but more likely to believe "physicians are uncomfortable discussing death with patients and families" than J (p=0.0316). No significant difference was found in other beliefs.

[Table 1]

	"Pain medications shorten life."			"Physicians are uncomfortable discussing death with patients and families."		
	JA (%)	**J (%)**	***P-value***	**JA (%)**	**J (%)**	***P-value***
Strongly disagree	12	7	0.0034	3	7	0.0316
Disagree	37	24		27	29	
Unsure	42	45		39	49	
Agree	5	21		27	12	
Strongly agree	5	4		3	2	

Conclusions: Some pain/communication-related beliefs differ significantly between JA and J. Appreciation of different acculturation levels might improve EOL communication.

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MANAGEMENT OF ANEMIA IN PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES OR SOLID TUMOURS IN FRANCE IN 2009–2010: THE ANEMONHE STUDY

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Objective: To describe anemia management in France during 2009–2010 in patients with hematological malignancies (HM) or solid tumors (ST) within the context of recent guidelines which recommend limiting the use of erythropoietin-stimulating agents (ESA) in this setting.

Methods: Adult patients with HM or ST treated for an episode of anemia (at least 3 months) occurring in the last 12 months, were included in this retrospective study performed in 57 centers randomly selected.

Results: 223 patients with ST (breast, 18%; lung, 18%) and 53 with HM (lymphoma, 60%) were included (median age, 68 years; female, 53%). Mean Hb level at baseline was 9.3 ±1.4 g/dL (<8 g/dL for 16%) and 9.8±1.1 g/dL (<8 g/dL for 6%) in HM and ST patients, respectively. Parameters of iron deficiency (ferritin, TSAT) were assessed in only 26% of HM and 19% of ST patients. Treatment of anemia included ESA for 98% of HM and 89% of ST patients. Iron was prescribed to 14% (oral, 12%; intravenous, 2%) of ST patients and to 42% (oral, 17%; intravenous, 25%) of HM patients. The rates of blood transfusions were still high: 70% in HM and 46% in ST; transfusions alone or administrated with ESA were more frequent in patients with Hb<8 g/dL.

Conclusion: Despite recommendations, ESA use and transfusions are considered as the treatment of choice for anemia in cancer. Iron deficiency is still insufficiently assessed (only one patient among five). As a consequence iron deficiency is most likely insufficiently treated.

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DEVELOPING PEDIATRIC PALLIATIVE CARE SERVICES IN WESTERN KENYA REGION

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Introduction: More than 80% of children with cancer live in resource limited countries where access to medical care is poor. Parents of children who died on a pediatric oncology service reported that despite treatment at the end of life, their children's suffering was not adequately

relieved. Pediatric oncology programs deliver inadequate palliation to children with cancer; with sporadic availability of oral morphine and strict administration regulations, uncontrolled pain is a major cause of suffering in these children. This paper highlights the introduction of Pediatric palliative care services, which provides psychosocial and pain management to children with life-threatening conditions and their families in the Western Kenya region.

Method: Two health facilities have been selected for pilot study; the implementing team comprises palliative care nurses, a pediatrician and a surgeon who make fortnight visits to these facilities. Activities include advocacy on early detection and role of chemotherapy in children's malignancies, provision of psychosocial care and pain management.

Results: Two clinic visits have been carried out at each site with 22 children turning up for the visit. Relief of distressing symptoms has been reported in 80% of these patients.

Conclusion: A model that incorporates palliative services into the mainstream of medical therapy should be emphasized as a standard for the care of all children with significant life-threatening or life limiting conditions. Challenges of improving survival and prognosis include first presentation at an advanced stage failure to start or adhere to treatment and lack of trained HCP's in children's palliative care.

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CANCER TREATMENTS AND HOLIDAYS: "MY CANCER DO NOT TAKE VACATION, NEITHER DO I"

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Objectives: Measure the influence of the anti-cancerous treatments on the holidays of the patients.

Methods: During the last week of October, the patients appearing at our out patient clinic for chemotherapy were asked if they were under treatment during June. To those who answered yes, we handed a questionnaire which discussed the progress of their vacation.

Results: 148 questionnaires were put back, among them 143 were exploitable:

- 44 patients (30%) declared that the disease (and treatments) had not modified their vacation's plan. In half of the cases, because the doctor adapted the dates of treatment, in other half because the vacation's project corresponded well to the dates of care.
- 99 patients (70%) declared a significant modification in their plan, among them:

* Complete suppression: 50%
* Decrease in duration: 75%
* Modification in the schedule: 70%
* Modification of place: 51%

30% also said they did not wish to take vacation any more. Only 3 patients declared to have been helped in the organization of the care, 44% would have like to find this help within their medical team (but they admitted not to dare to speak about it in 25% of cases)

Conclusion: One patient out of 3 cancels his holidays because of chemotherapy, another one modifies them seriously. When the oncologists pay attention to this problem, they prefer to modify the treatment rather than to organise care in another place.

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PALONOSETRON AND DEXAMETHASONE IN PREVENTION OF CHEMOHTERAPY-INDUCED NAUSEA AND VOMITING (CINV) IN PATIENTS UNDERGOING HIGH DOSE CHEMOTHERAPY (HDCT)

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Objectives: Control of CINV in patients undergoing HDCT is still sub-optimal and limited data are available both for single day HDCT (SD-HDCT) than for multiple days (MD-HDCT). This study assessed the efficacy of palonosetron (PALO) plus dexamethasone in patients undergoing HDTC.

Methods: We prospectively treated patients with PALO 0.25 mg every-other-day and dexamethasone 8 mg, twice-a-day, for the entire chemotherapy. Primary endpoint was the Complete Response (CR, No-vomiting and no use of rescue medication), evaluated during the overall phase (0–120 hrs after chemotherapy). The results were retrospectively compared to similar patients treated with ondansetron (ONDA), 8 mg twice-a-day and the same dexamethasone dosage.

Results: Ninety-eight patients underwent HDCT were treated with PALO, most of them with a diagnosis of non-Hodgkin's lymphoma (64.3%), Hodgkin's lymphoma (10.2%) or multiple myeloma (6.1%). Forty-eight patients (49%) received a MD-HDTC while 50 (51%) received a SD-HDCT. Results compared to the retrospective data of ONDA are tabbed below:

[Table-1]

Variable	PALO % (n/N)	ONDA % (n/N)	P-value
CR - HDCT	85.7 (84/98)	57.9 (55/95)	0.00001
CR - MD-HDCT	87.5 (42/48)	67.6 (23/34)	0.02
CR - SD-HDCT	84 (42/50)	52.5 (32/61)	0.0004
EFree - HDCT	88.8 (87/98)	67.4 (64/95)	0.0003
EFree - MD-HDCT	87.5 (42/48)	73.5 (25/34)	0.1
EFree - SD-HDCT	90 (45/50)	63.9 (39/61)	0.0014

CR: complete response—no-vomiting and no rescue medication; EFree: no-vomiting

Conclusions: Our results indicate that PALO every-other-day plus dexamethasone achieves a high control of CINV in patients undergoing HDCT.

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RISK OF PATIENT-REPORTED ORAL MUCOSITIS DURING CHEMOTHERAPY FOR COLORECTAL CANCER(CRC): DO MULTIPLE CYCLES MULTIPLY RISK?

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Objectives: Our objectives were to 1) estimate the risk of oral mucositis (OM) during multiple chemotherapy cycles and 2) identify factors associated with initial and subsequent OM episodes.
Methods: We used data from the Burden of Illness Study from 120 CRC patients (Folfox: 108, FOLFIRI: 12) who completed the Oral Mucositis Daily Questionnaire during 659 chemotherapy cycles. OM was defined as mouth and throat soreness (question 2 $\geq$ 1) that caused more than a little limitation in eating (question 3c $\geq$ 2). Hazard ratios (HR) from proportional hazards analyses identified factors associated with OM.
Results: The majority of patients was male (53%), white (83%), smokers (54%), and had good performance status (96% ECOG $\leq$1). Their median age was 65 years. Fifty-three patients (44%) developed OM during 115 (17%) cycles. The risk of an initial OM episode decreased from 17% in cycle 1 to 0% in cycle 8, but among patients who developed OM, the risk during subsequent cycles exceeded 35%. Patients with pre-existing hepatic (HR=2.61, p=0.04) and inflammatory bowel disease (HR=8.85, p=0.0008) developed an initial OM episode earlier in their course of therapy than those without these conditions. Each prior OM episode doubled the risk of subsequent OM (HR=2.10, p<0.001) as did pre-existing dental pain (HR=2.59, p=0.06).
Conclusions: OM is more common among CRC patients receiving chemotherapy than previously believed. Although the risk of an initial OM episode decreases over multiple cycles, the risk of subsequent episodes exceeds 35%. These findings have important implications for clinical trial design.

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REDACTION OF RECOMMENDATIONS ABOUT ORAL CARE IN CANCEROUS PATIENTS

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Purpose: The purpose of this work was to write down recommendations about oral care management in patients treated for a cancer.
Method: It was decided that the recommendations would deal with the management of patients treated by radiotherapy for a maxillo-facial tumor and patients treated by chemotherapy for any tumor location.
The study group included oral surgeons, radiotherapists and medical oncologists from three french regional supportive care networks. First, a literature revue was made by two practitioners in order to elaborate a basis for the future discussions. Then, two meetings (one for the radiotherapy, one for the chemotherapy) gathered practitioners who discussed and enriched this basis. Finally, the enriched basis of the work was discussed in a national group in order to end up with the adoption of the recommendations (AFSOS[1]).
Results: Most recommendations are presented under the form of decision trees for each situation, which allows an easy look up.
Conclusion: The recommendations insist on the impotance of a preventive approach of dental care in the context of maxillo-facial radiotherapy and general chemotherapy.
[1] French association of cancer care support

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THE ACCURACY OF CLINICAL PREDICTION OF SURVIVAL (CPS) FOR ADVANCED CANCER PATIENTS: THE ROLE OF PROFESSION AND PROBABILITY QUESTION

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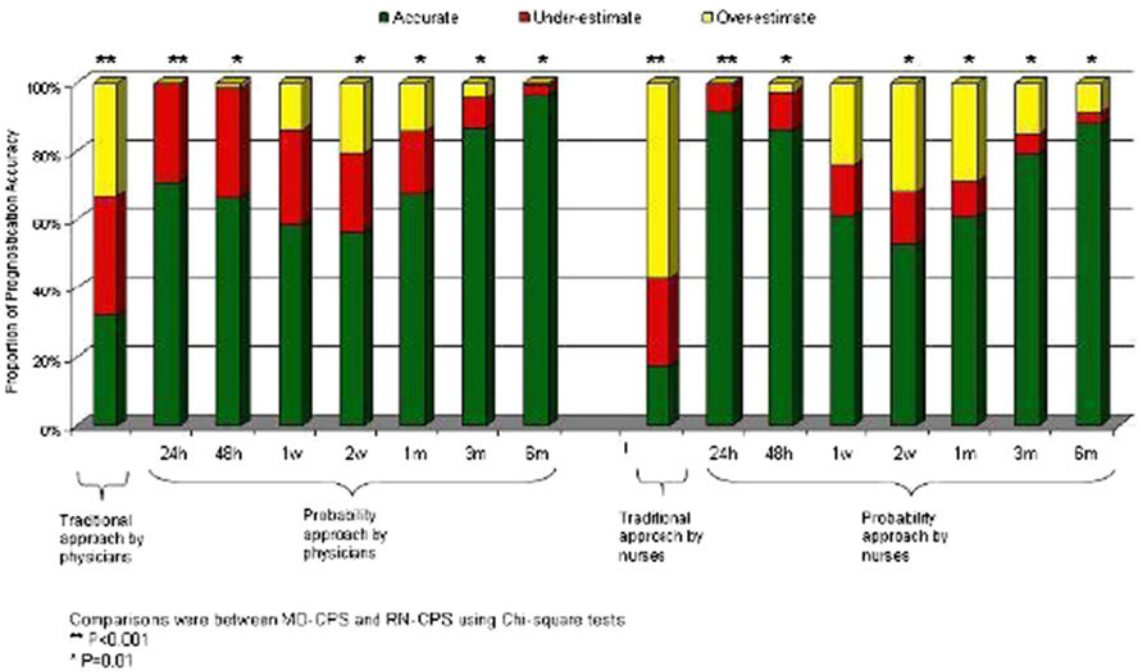
Background: CPS is critical for clinical decision making. We examined the roles of profession (MDs vs. RNs), question type (time vs. probability of survival) and patient/clinician characteristics in determining the accuracy of CPS among advanced cancer patients admitted to our acute palliative care unit.
Methods: Eight MDs and 20 RNs provided their estimation of survival on admission by the **Traditional approach** "What is the approximate survival for this patient (in days)?" and the **Probability approach** "What is the approximate probability that this patient will be alive (0-100%)?" for ≥24 h, 48 h, 1w, 2w, 1 m, 3 m and 6 m. We also collected demographics on patients and clinicians.
Results: Among the 151 patients, the median age was 58, 95 (63%) were female, and 138 (81%) had solid tumors. The median overall survival, MD-CPS and RN-CPS were 12 d, 14 d and 20 d, respectively. Both MDs and RNs overestimated survival with the traditional approach (RNs > MDs, P≤0.01, Figure 1), but were significantly more accurate with the probability approach (P<0.001). With the probability approach, RNs were more accurate for ≤1w estimation, while MDs were more accurate for ≥1 m estimation. Higher accuracy of MD-CPS was associated with older patient age (p=0.02) but no other patient characteristics.
Conclusions: Higher CPS accuracy was associated with the use of the probability approach and older patient age. RNs were highly accurate in the last 48 h of life.



[Figure 1. Accuracy of MD-CPS and RN-CPS]

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POLYPRENOL COULD PREVENT LOSS OF E-CADHERIN AND FILAGGRIN IN CHEMOTHERAPY-INDUCED CUTANEOUS REACTIONS

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Objectives: Nearly one quarter of cancer patients require chemotherapy dose reduction or skin toxicity treatment. E-cadherin constitutes the major adhesion molecule in adherens junctions of keratinocytes. In epithelial cells loss of filaggrin correlates with dermatitis. The resent results are in favour of the idea that N-glycosylation in keratinocytes cells (KC) is limited by DPAGT1 expression. The aim of the present study is to investigate the effect of Polyprenol (PP), which provides a dolichol phosphate (DolP) substitute on regulation of filaggrin and E-cadherin expression.
Methods: E-cadherin and filaggrin expression was measured in skin biopsies from 146 cancer patients treated with cisplatin, cyclophosphamide, docetaxel, doxorubicin and trastuzumab and cultured keratinocytes. Immunohistochemical and Western blotting methods were used to detect the changes in the expression levels of E-cadherin, filaggrin, DPAGT1. Intermediates of DPC fractions were analysed by HPLC method.

Results: Skin toxicities cause overexpression and abberant N-glycosylation of filaggrin in DPC KC differ from normal one in filaggrin content lost by 3–4 times and E-cadherin by 2 times. The study showed overexpression of DPAGT1 and 6-fold DPC intermediates decrease in KC during cutaneous reactions It is established that PP in the concentration 10^{-2} M could overcome DPAGT1 overexpression which leads to regulation of filaggrin and E-cadherin N-glycosylation.
Conclusions: The findings indicate that DPAGT1 overexpression in KC can be overcomed by PP, which provides a DolP substitute for DPAGT1 normal expression, N-glycosylation, filaggrin and E-cadherin loss prevention. Polyprenol could be a promising agent for cutaneous toxicity prevention and management.

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PROPHYLACTIC G-CSF ADMINISTRATION IN PATIENTS WITH SOLID TUMORS: THE ITALIAN "OBSERVE" STUDY

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Objectives: The OBSERVE observational, prospective study was designed to describe the use of G-CSFs in Italian practice, after some expert panels had suggested that many different administration schedules, often unsupported by an evidence-based rationale, were employed.
Methods: Patients were eligible at their first administration of a G-CSF following chemotherapy (CT) for a non-hematologic malignancy. Primary outcome measures were G-CSF type, timing of administration and number of doses administered during each CT cycle.
512 eligible patients (63.5% females, median age 62 years), were enrolled at 23 Italian Oncology Units and observed for up to 3 CT cycles.
Results: A total 1164 G-CSF cycles were observed (61.7% daily G-CSF, 38.3% pegfilgrastim). 58% of daily G-CSF and 92% of pegfilgrastim cycles were administered ≤72 hours after the end of CT. When daily G-CSFs were used (N=719 cycles), the number of administered doses was ≤3 in 47% of cycles, 4–5 in 39% of cycles, and ≥6 in 14% of cycles. In 13% of the observed daily G-CSF cycles G-CSF doses were not administered on consecutive days. The relative dose intensity (RDI) of administered CT was below 80% in 10.1% of patients receiving pegfilgrastim, in 16.1% of patients receiving daily G-CSF and in 22.9% of patients who started daily G-CSF later than 72 hours after CT and/or received less than 6 doses.
Conclusions: Study outcomes confirmed that G-CSF prophylaxis is sometimes not administered according to Italian (AIOM) and International guidelines, and suggest the need for specific educational programs from the scientific societies.

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SYMPTOM SEVERITY, UNCERTAINTY, AND QUALITY OF LIFE IN NEWLY DIAGNOSED LUNG CANCER PATIENTS IN TAIWAN

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Objectives: The purposes of this study were to
(1) examine the level of symptom, uncertainty and quality of life; and
(2) explore relationships between symptom severity, uncertainty, and quality of life in newly diagnosed lung cancer patients.
Methods: A cross-sectional design and purposive sampling were used to recruit 107 patients from a medical center in Taiwan. Data were collected by
(1) Mishel's Uncertainty in Illness Scale,
(2) the European Organization for Research and Treatment of Cancer- Core Quality of Life Questionnaire (EORTC QLQ-C30, V3.0) and 13-item Lung Cancer-Specific Questionnaire Module (LC-13), and
(3) Background Information Form. Descriptive and correlation analysis were used in this study.
Results: The results showed that
(1) cough was the most distressed symptom, following by insomnia, and pain.
(2) Moderate level of uncertain (M=2.8, SD=0.3, range=1-5) with the most uncertain problem of "What's going to happen next" (mean=3.9, SD=0.6) were noticed. The lowest level of global quality of life (M=63.5, SD=19.3) was reported.
(3) Overall quality of life was negatively associated with insomnia (r=−.39), pain (r=−.34), and fatigue (r=−.43). The level of uncertainty was negatively associated with emotional function of quality of life (r=−.31, p<.05).
Conclusions: The level of symptom and uncertainty were associated with quality of life; therefore, comprehensive interventions in decreasing the level of uncertainty and symptom severity for newly diagnosed lung cancer patients were recommended in order to improving their quality of life.

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ACCULTURATION AND PERCEPTIONS OF GOOD CANCER DEATH AMONG INDIVIDUALS OF JAPANESE ANCESTRY LIVING IN AMERICA

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Objectives: To demonstrate differences in perceptions of good cancer death between Japanese Americans (JA) and Japanese (J) living in America.
Methods: Self-administered surveys were distributed to JA/J who participated in two social events in New York and West Virginia, and to members of the Japanese American Association in New York. Primary endpoint was rating on a 7-point Likert scale (1 = absolutely unnecessary—7 = absolutely necessary) of 18 components that were shown to contribute to good cancer death in a previously-published Japanese nationwide study. T-tests were used to compare mean ratings between JA and J respondents.
Results: 366 of 1132 questionnaires were returned (32%). 69 (19%) subjects identified themselves as JA and 297 (81%) as J. Most were ≥60 years old (63%), female (77%), and have lived in America ≥21 years (72%). JA rated the following significantly lower than J: 'staying at one's favorite place' (6.00 vs 6.27, p=0.0377), 'trusting physician' (6.31 vs 6.60, p=0.0089), 'having some pleasure in daily life' (6.05 vs 6.30, p=0.0473), 'feeling that one's life was completed' (5.51 vs 6.13, p=0.0002), 'dying a natural death' (5.71 vs 6.05, p=0.0424), 'seeing people whom one wants to see' (5.33 vs 5.75, p=0.0177), and 'maintaining one's role in family or occupational circumstances' (5.16 vs 5.54, p=0.0397). JA rated 'having faith' significantly higher than J (4.89 vs 4.39, p=0.0418).
Conclusions: Perceptions of good cancer death differ significantly between JA and J, reflecting prevailing attitudes in American and Japanese society. Appreciation of different levels of acculturation might contribute to optimal end-of-life care.

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CHEMOTHERAPY INDUCED NAUSEA AND VOMITING (CINV) DURING 4 COURSES OF AC

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Objectives: Little is known about the CINV and QOL transitions of patients undergoing multiple courses of chemotherapy. We aimed to ascertain changes in nausea and vomiting induced by 4 courses of an AC regimen.
Methods: 65 female breast cancer patients who underwent 3 weekly/4 courses of FEC (5FU + Epirubicine + Cyclophosphamide) in 2009 were enrolled in this study. Anti-emetic therapy was granisetron and dexamethasone without aprepitant, which was not available in Japan in 2009. QOL was assessed just before and 1 week after each course of chemotherapy using a QOL-ACD questionnaire. Nausea and vomiting were recorded in patient diaries. Nausea and appetite were assessed by VAS (Visual Analogue Scale; 100 mm indicates the best appetite or no nausea).
Results: Data were collected from 61 of the 65 patients. The average frequency of vomiting decreased from 4.14 (SD 4.41) to 3.59 (SD 3.28) times and the number of patients who vomited decreased from 22 to 17 during 4 FEC courses. The average VAS of no nausea decreased from 69 to 61. The worst appetite day became earlier (from day 4 to day 2) and recovery from appetite loss became more rapid during all courses. The loss of face scale of the QOL-ACD was related to loss of appetite.
Conclusions and considerations: Nausea worsened, while vomiting showed amelioration during 4 FEC courses. Discordance in changes between vomiting and nausea provides novel insights into these side-effects, such as the limited effectiveness of rescue for vomiting but not nausea.

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THE RELATIONSHIP BETWEEN BODY IMAGE AND ANTICIPATORY EMOTIONAL DISTRESS IN BREAST CANCER SURGICAL PATIENTS: AGE AS A MODERATOR

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Objectives: Literature on the relationship between age and body image in women has found
1) body image remains relatively stable throughout the lifespan; and
2) the strength of the relationship between body image and emotional distress decreases with age.
However, the literature has focused almost exclusively on women undergoing "normal" bodily changes associated with aging, and has ignored age effects in women undergoing "abnormal" changes such as breast cancer surgery. The primary objective of this study was to examine whether age moderates the relationship between body image and anticipatory emotional distress in breast cancer surgery patients.

Methods: Older (≥65 years, n=40) and younger (<65 years, n=40) women scheduled for breast cancer surgery were compared. Groups were matched on ethnicity, marital status, and surgery type (excisional biopsy, lumpectomy, mastectomy). Prior to breast cancer surgery, participants completed measures of demographics, emotional distress (general, surgery-specific), and body image.
Results: Although body image did not differ between the age groups ($p>.9$), results revealed a significant interaction ($p<.05$) between age and body image. Younger women with poorer body image had higher anticipatory distress. However, in older women, body image and distress were not significantly related.
Conclusions: Literature suggests that younger women with pre-existing poor body image may be at increased risk for emotional distress associated with impending breast cancer surgery. Future qualitative research should explore the cognitive, societal, and developmental reasons for younger women's distress and older women's resilience. Such research will inform psychosocial interventions to manage patients' pre-surgery distress.

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HAIRY CELL LEUKEMIA WITH SWEET SYNDROME (UNUSUAL CLINICAL PRESENTATION)

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Acute febrile neutrophilic dermatosis (Sweet's syndrome) is characterized by pyrexia, neutrophilia, and the abrupt appearance of erythematous, painful, cutaneous plaques. Approximately 20 percent of patients with Sweet syndrome have an associated cancer. Hematologic malignancies, most commonly acute myelogenous leukemia, account for 85 percent of the associated malignancies. The most common solid tumors are those of the genitourinary tract, but rarely occurs in patients with hairy cell leukemia (HCL). We report the case of a patient with hairy cell leukemia that complicated with further sweet syndrome and during treatment had a Grover's disease.

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SAFETY AND TOLERABILITY OF OXANDROLONE (OX) IN COMBINATION WITH MEGESTROL ACETATE (MA) FOR THE TREATMENT OF CANCER-ASSOCIATED ANOREXIA/CACHEXIA (CAC)

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Objectives: Ox is an anabolic androgenic steroid utilized for muscle wasting syndromes and cancer related weight loss. MA is a standard treatment for appetite stimulation in patients with CAC. We hypothesized that MA would increase appetite and fat mass while Ox would promote an increase in lean body mass. The primary endpoint of this study was to assess the safety and tolerability of this combination.
Methods: In this study, all patients received Ox 10 mg po BID with MA 800 mg po daily for 3 months for the treatment of CAC. Safety and tolerability were assessed through weekly phone calls for the first month and monthly office visits thereafter. Secondary endpoint was to assess for change in actual body weight, lean body weight, fat mass and water percentage. Body composition was assessed using a Bioelectrical Impedance Analysis (BIA) device. Five patients consented to treatment to date.
Results: No adverse events related to the combination of Ox and MA has been observed to date, however 1 patient did develop a DVT which is a known SE of MA and malignancy.
Conclusions: This is an ongoing prospective trial. 1 patient had significant positive change in body composition and others either gained fat mass or had no change in their body composition. We are not aware of any studies evaluating the use of Ox and MA together for the treatment of CAC and believe our early results warrant a larger prospective randomized controlled trial.

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HEALTH CARE COSTS IN CHEMOTHERAPY INDUCED NAUSEA AND VOMITING: A RETROSPECTIVE ANALYSIS OF A COMMERCIALLY INSURED U.S. PATIENT POPULATION

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Objective: To examine chemotherapy induced nausea and vomiting (CINV)-related health care costs incurred by patients undergoing highly and moderately emetogenic chemotherapy (HEC and MEC) treatment.
Methods: This was a retrospective cohort analysis using pharmacy and medical claims from from a U.S. commercially insured patient population. Patients were newly

diagnosed with breast, lung, or colon cancer, treated with a single-day MEC or HEC regimen, and received prophylactic 5-HT_3-RA treatment during the period 4/1/2008 and 3/31/2009. Patients were followed for one cycle of chemotherapy or up to 30 days. CINV was defined by a claim with a primary ICD9-CM code for nausea and vomiting or volume depletion, or an antiemetic infusion in the followup period. The primary outcomes of interest were the rate of CINV and CINV-related health care costs.

Results: A total of 5,912 patients were identified, 25.7% (N=1,518) undergoing HEC and 74.3% (N=4,394) with MEC. The mean age was 56.1 (SD=10.5) and 77.1% were female. For patients on HEC, 10.6% (N=161) experienced CINV and incurred $2,047 in CINV-related health care costs. For patients on MEC, 23.1% (N=1,017) experienced CINV, with $2,060 in related costs. Mean total health care costs in the first cycle for patients with CINV were $18,836 (SD=$27,069) compared to $9,582 (SD=$22,936) for patients without CINV ($p<.001$).

Conclusions: Patients who experienced CINV in the first month of chemotherapy had nearly double the health care costs of patients without CINV. Controlling CINV in these patients may have a dramatic impact on total health care costs.

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GSK3 BETA INHIBITORS PROTECT THE INTESTINE, BRAIN, BONE MARROW, SKIN AND HAIR FROM RADIATION INJURY

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Objectives: The cytoprotective effects of lithium led to the discovery that GSK3 Beta signaling is required for radiation-induced apoptosis. We studied knockdown and specific inhibitors of GSK3 Beta to validate this molecular target for radiation protection drug development.

Methods: SB294006 and Lithium were administered to mice by intraperitoneal injection prior to irradiation. Tissues from the brain, intestine and skin were then sectioned to image apoptosis using microscopy. Functional studies included learning and memory using rodent mazes and intestinal function studies.

Results: Specific inhibitors and knockdown of GSK3 Beta showed cytoprotection of neurons, intestinal epithelium and hematopoietic cells in culture. GSK3 inhibitors prevented radiation induced apoptosis in the brain, intestine, bone marrow, skin and hair follicles. These drugs did not prevent radiation induced cell death in cancer cells. Cancer cells do not undergo apoptosis in response to radiation but die from post-mitotic cell death and senescence. The mechanism of action of GSK3 inhibitors is through increased expression of BCL2 and inhibitor of apoptosis proteins (IAPs). There is also reduced expression of BAX. We conducted a Phase I clinical trial to determine that lithium was safely administered to patients receiving brain irradiation for brain metastases. This study showed that lithium did not prevent cancer response to therapy. Lithium was well tolerated in patients receiving during brain irradiation.

Conclusion: GSK3 Beta is a new molecular target for the development of cytoprotective agents in patients receiving cancer therapy.

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STUDY OF PSYCHOLOGICAL STATUS OF PALLIATIVE AND CURABLE PATIENTS

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Objectives: Psychology is an important aspect of palliative care. The study compared psychological status of palliative and curable patients.

Methods: 60 patients were selected for the study. 30 of these patients had the diagnosis of the end stage cancer disease (stage 3–4, palliative group) and 30 patients at the stage 1–2 (curable group). These groups were similar in the age and sex distribution and the patients didn't have uncontrollable pain.

Results: The method of Dr A. Lichko to diagnose the Inner Picture of Disease demonstrated that most of the patients (96%) in both of the groups had a deviation from the normal values, which required psychological correction. The patients with dysadaptation (both intrapsychological and interpsychological) were observed more often ($p<0.05$) in the palliative group. More prominent dysadaptive types in the curable group were hypochondriac, and sensitive types. In the palliative group the prevailing types were hypochondriac, apatic and dysphoric.

The eight-color Lusher test demonstrated high level of the anxiety in both groups. The prevailing compensation mechanism in the curable group was the desire in relief and support. The prevailing compensation in both groups were the rejection, negativism and aggressive-destructive impulses.

The level of depression (by T Balashova's method) was significantly higher in the curable group comparing to the palliative group.

Conclusions: The statistical analysis showed significant variability of the data, which signifies difference in the psychological reaction of the individual patient, and this requires the need of the specific approach to every patient.

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IN-HOSPITAL MORTALITY PREDICTION FOR ADVANCED CANCER PATIENTS ADMITTED TO AN ACUTE PALLIATIVE CARE UNIT (APCU): A PROSPECTIVE STUDY

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Background: APCUs provide intensive symptom support and transition of care for advanced cancer patients. Better understanding of the predictors of in-hospital mortality facilitates program planning. In this prospective study, we identified factors associated with APCU mortality.
Methods: Between April and July 2010, we documented baseline demographics, the Edmonton Symptom Assessment Scale (ESAS), 80 clinical signs including known prognostic factors, and 28 acute complications daily from admission to discharge in consecutive APCU patients. Factors with P≤0.005 in univariate analysis, cancer diagnosis, and total ESAS score were included in a multivariate logistic regression model. A nomogram was constructed.
Results: Among 151 consecutive patients, the median age was 58, 95 (63%) were female, 13 (9%) had hematologic malignancies, and 51 (33%) died in hospital. Table 1 shows predictors of in-hospital mortality in multivariate analysis, including advanced education (OR=9.4, p=0.002), hematologic malignancies (OR=8.6, P=0.02), delirium (OR=4.3, P=0.02), and high total ESAS (OR=24.7, P=0.01). In a nomogram based on these 4 variables (Table 1), the risk of death according to the total score was 0-30% for score <12; 31–70% for score 13–18; and >70% for score >18, with a specificity of 93%, and receiver-operator curve concordance index of 83%.
Conclusions: Higher education was associated with increased utilization of the interdisciplinary palliative care unit until the end of life. Patients with higher symptom burden, delirium and hematologic malignancies were also more likely to require APCU care until death.

	Univariate analysis Alive N=100 (%)	Died N=51 (%)	P-value	Multivariate analysis Odds ratio (95% Cl)	P-value	Nomogram Score
Education						
High school	45 (59)	12 (30)	0.005	1.0	–	0
College or less	27 (33)	18 (45)		2.1 (0.6–6.9)	0.24	2.5
Advanced	7 (9)	10 (25)		9.4 (2.5–56.2)	0.002	6
Hematologic malignancy	5 (5)	8 (16)	0.027	8.6 (1.3–55.1)	0.02	6
Delirium	48 (48)	43 (84)	<0.001	4.3 (1.3–14.8)	0.02	6
Total ESAS						
0–30	23 (27)	2 (6)	0.01	1.0	–	0
31–60	57 (67)	26 (77)		3.7 (0.7–20.5)	0.13	6
61–90	5 (6)	6 (18)		24.7 (2.0–214)	0.01	10

[Table 1. Predictors of In-Hospital Mortality]

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A RETROSPECTIVE STUDY MONITORING HEMOGLOBIN LEVEL IN METASTATIC CANCER PATIENTS RECEIVING IRON INTRAVENOUS SUPPORT

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Introduction: Mild to moderate degrees of anemia, not considered serious enough to warrant transfusion therapy, may adversely affect functional capacity and quality of life. While the effects of erythropoietin agents (ESA's) are well established, the consequences of intravenous iron (IV iron) are still uncertain. Data suggest IV iron may be useful to improve Hemoglobin (Hg) level.
Objectives: To evaluate the degree of response of Hg with IV iron support in metastatic cancer patients under palliative treatment.
Material and methods: Between October 2010 and January 2011, analysis of data documented the incidence of anemia. Hg levels were measured before iron support

(Hb_0) and 4 weeks later (Hb_4). Patients with anemia grades 1 and 2 were given IV iron formulation. National Cancer Institute grading system (NCI grading system) was used.

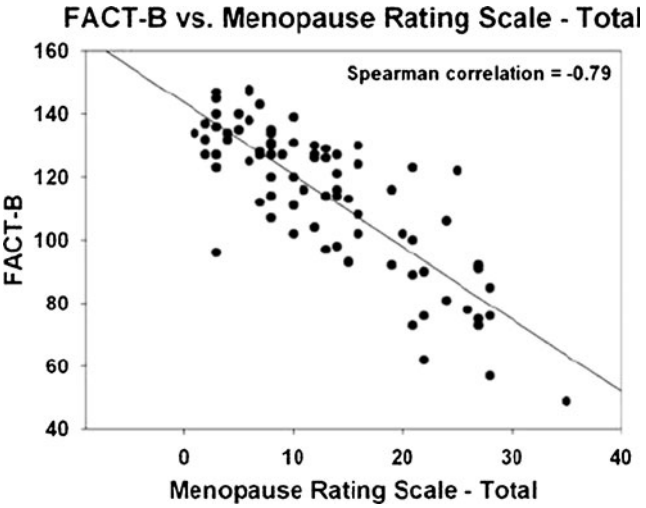
Results: 21 metastatic cancer patients under palliative treatment received IV iron formulation. These patients didn't require red blood cell transfusion or ESA's.

62% of the population studied had anemia grade I, and 38% grade II (NCI grading system)

The average Hg level before iron support was measured in the group with and without metastatic bone disease with an increase 0.23 and 0.74 mg/dl respectively.

Conclusion: Although the study is descriptive we can suggest that iron supplementation allows better maintenance and increase of Hg level in patients with metastatic disease.

Lower Hg levels and worse responses to IV iron were seen in patients with M-bone, suggesting a relationship between the site of metastases and the response of Hg level to iron support.



[FACT-B corelation with MRS]

Conclusions: Impact of breast cancer on QOL continues for several years. Menopausal symptoms in addition to chemotherapy significantly impact QOL.

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IMPACT OF MENOPAUSAL SYMPTOMS ON QUALITY OF LIFE IN BREAST CANCER SURVIVORS

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Objectives: To explore the determinants of quality of life (QOL) in breast cancer survivors to augment the scope of survivorship programs.

Methods: Functional Assessment of Cancer Therapy-Breast Cancer (FACT-B) Questionnaire was mailed to breast cancer survivors. High scores = better QOL. Associations of FACT-B with tumor and treatment characteristics and menopausal rating scale (MRS) were estimated using Spearman correlation, t-tests, and ANCOVA.

Results: 91/270 (33%) women responded. Mean (SD) age was 62.8(12.6) yrs, and time since diagnosis mean (SD) was 2.8 yrs (1.9). In unadjusted analyses, age was positively correlated with QOL ($r=0.24$; $p<0.05$), and MRS scales were negatively correlated with QOL ($r=-0.48$ for psychological, -0.74 for somatic, -0.53 for urogenital, -0.79 for total). Time since diagnosis was unrelated ($r=-0.03$). QOL was lower with higher stage, chemotherapy, uninsured/Medicaid, mastectomy with radiation, and cancer recurrence. In multivariate analyses, only chemotherapy and MRS subscales remained significantly associated with QOL.

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USE OF ANTICOAGULANTS AND PREVALENCE OF VENOUS THROMBOEMBOLISM (VTE) IN A TERTIARY PALLIATIVE CARE UNIT

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Background: Venous Thromboembolism (VTE) is a well recognized cancer- related complication. Multiple international guidelines were issued for VTE prophylaxis in cancer patients. However, in the palliative setting primary prophylaxis of VTE is still controversial.

Study objectives: To review the use of anticoagulants, complication from anticoagulation and prevalence of VTE in a tertiary palliative care unit (TPCU).

Methods: Retrospective chart review of patients admitted to a TPCU from January 1st until December 31st, 2009. Demographic data of patients who received anticoagulation during the study period was collected.

Result: 245 patients were admitted to the TPCU. Sixty-two patients (25%) received anticoagulation for VTE prophylaxis: 22 patients were continued on anticoagulation for secondary prophylaxis and 26 patients received primary prophylaxis. Eighteen patients (7%) developed new symptoms of VTE during admission requiring acute treatment with anticoagulation. Of the 18 patients who developed VTE symptoms, 4 patients had received primary prophy-

laxis. Agents used for primary prophylaxis were LMWH in 90% and UFH in 5%. Three patients (5%) had complication of bleeding and 3 patient (5%) developed recurrence VTE despite adequate anticoagulation treatment.

Conclusion: In our TPCU, 11% of patients received primary prophylaxis for VTE. LMWH was commonly used with bleeding complications being experienced by a minority of our patients (5%). There seems to be a subgroup of patients who would benefit from primary prophylaxis of VTE. The challenges of VTE diagnosis, true prevalence of VTE and the balance between quality of life and anticoagulation treatment burden warrants further investigation in prospective multicentric trials.

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EVALUATION OF LATE AND ACUTE ORAL TOXIC EFFECTS IN PATIENTS UNDERGOING CHEMORADIATION FOR THE PRESERVATION OF THE LARYNX

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Objectives: To evaluate the incidence of oral toxicities in patients suffering from larynx squamous cell carcinoma who undergo chemoradiation for the preservation of the organ.

Methods: 23 patients who underwent chemoradiation for the preservation of the organ were assessed retrospectively (Rt: 6MV linear accelerator concomitant to 3 cycles of cisplatin with 21-day intervals) between February/2006 and December/2010 in the "Hospital do Câncer" in Divinópolis. Data concerning the patients' traits, as well as the stage of the illness and oral complications coming from the treatment were collected.

Results: The sample is composed of 78.3% of male patients and 21.7% of female patients. The average age was 63.7 years. As for the clinical stage of the illness, 73.9% were in stage III, 21.7% were in stage IV and 4.3% were in stage I. As far as the total amount of radiotherapy is concerned, 56.5% had 7020 cGY, 26.1% had 6840 cGY and 4.3% had more than 7020 cGY. As for the oral complications, 52.6% of the patients had oral mucositis grade III and IV and 47.4% had oral mucositis grade I and II. The studies showed that 78.9% of the patients had xerostomy, 31.6% had candidiasis, 94.7% had dysgeusia and no incidence of Trismus was observed.

Conclusion: The late and acute oral toxic effects were statistically high. Random clinical studies have been evaluating, and validating, the concept of preservation of the larynx. However, strategies to reduce the toxic effects related to the treatment must be developed.

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BENEFITS OF INITIATING ZOLEDRONIC ACID (ZOL) PRIOR TO THE ONSET OF PAIN IN PATIENTS WITH BONE METASTASES

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Objectives: Screening for bone metastasis is not routine for many malignancies, and bone metastases might not be diagnosed until after the onset of symptoms such as bone pain. However, bone structural integrity may have diminished considerably before pain onset, placing patients at increased risk for potentially debilitating skeletal-related events (SREs) such as pathologic fractures and spinal cord compression before they can be treated with bone-protecting agents.

Methods: Exploratory analyses were performed in patients with bone metastases from breast cancer (BC) or lung cancer/other solid tumors (LC/OST) enrolled in 2 randomized trials comparing monthly ZOL versus pamidronate (BC) or placebo (LC/OST). Analyses included proportion of patients with ≥1 SRE, time to first SRE, and skeletal morbidity rate (SMR) in patients with and without baseline pain.

Results: Approximately 80% of patients reported bone pain at baseline. Consistent with the overall trial results, ZOL reduced the SMR in all groups. Although some subsets lacked statistical power, benefits were generally greater in patients without versus with baseline bone pain. For example, in BC, ZOL increased the 25th quartile of time to first SRE versus pamidronate by 522 days in patients without baseline pain (median not reached for either group), but by only 10 days in patients with baseline pain. Trends were similar in patients with LC.

Conclusions: Benefits from ZOL appeared to be greater when it was introduced before bone pain onset. Early diagnosis and ZOL treatment of bone metastases may be especially effective compared with waiting for the onset of bone pain.

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LACK OF DEFINITIONS FOR COMMON TERMINOLOGIES IN THE SUPPORTIVE AND PALLIATIVE ONCOLOGY (SPO) LITERATURE

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Background: Both NIH and ASCO raised concerns regarding the lack of clear definitions for many terminologies in the SPO literature. We determined:
(1) the frequency of 10 commonly used terms in the SPO literature;
(2) the proportion of articles that provided definitions for each term; and
(3) how each term was defined.
Methods: We systematically searched MEDLINE, PsychInfo, EMBASE, ISI Web of Science, and CINAHL for original studies, review articles and systematic reviews related to palliative care (PC) and cancer in the first 6 months of 2004 and 2009. Twenty oncologists and PC specialists ranked 18 common terms based on the frequency of use and relative importance. We counted the number of occurrences for the top 10 terms in each article, reviewed them for the presence of definitions, and classified the journal type.
Results: Among the 1213 articles, 848 (70%) were original studies. "Palliative care" and "end of life" were the most frequently used terms (Table). "Palliative care", "end of life" and "terminally ill" appeared more frequently in PC journals as compared to oncology journals ($P<0.001$), while "best supportive care" appeared more often in oncology journals ($P<0.001$). Only "palliative care" had a "consensus" definition (WHO in 20/35). "Supportive care" and many other terms were rarely defined (<5%).
Conclusions: Our findings highlighted the lack of definitional clarity for many key terms in the SPO literature. Standard definitions are needed to improve clinical communication and research standardization.

Term	Number of articles including the term N (%)	Median number of occurrences per article N (interquartile range)	Definition present N (%)
Palliative care	601 (50)	6 (2–14.5)	35 (6%)
End of life	386 (32)	4 (1–9)	0 (0%)
Terminally ill	245 (20)	2 (1–5)	5 (2%)
Hospice care	151 (12)	2 (1–4)	13 (9%)
Supportive care	106 (9)	1 (1–3)	2 (2%)
Terminal care	67 (6)	1 (1–2)	2 (3%)
Goals of care	55 (5)	2 (1–4)	1 (2%)
Best Supportive care	26 (2)	1 (1–2)	1 (4%)
Actively dying	15 (1)	1 (1–2)	1 (7%)
Transition of care	1 (0.1)	1 –	0 (0%)

[Table. Frequency and Definitions for 10 SPO Terms]

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CHEMOTHERAPY INDUCED NAUSEA AND VOMITING FOLLOWING PROPHYLACTIC 5-HT$_3$-RA ANTIEMETIC TREATMENT IN MODERATELY EMETOGENIC CHEMOTHERAPY

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Objective: To compare the risk of chemotherapy induced nausea and vomiting (CINV) following prophylactic use of palonosetron vs. another 5-hydroxytryptamine-3 serotonin receptor antagonists (5-HT3-RA) in patients treated with a moderately emetogenic chemotherapy (MEC) regimen.
Method: This was a retrospective cohort analysis using HIPAA-compliant claims in a commercially-insured U.S. patient population. The study included MEC-treated breast, lung, or colon cancer patients receiving a prophylactic 5-HT3-RA between 4/1/2008 and 3/31/2009. Patients were followed during the first cycle of chemotherapy. Baseline variables included demographic data, cancer type, and comorbidity. The primary outcome was occurrence of CINV, defined as an antiemetic infusion or a medical claim

with a primary diagnosis of nausea and vomiting (ICD-9-CM 787.0x) or volume depletion (276.5x) on any day following chemotherapy. Multivariate analyses adjusted for baseline differences between groups.

Results: The final sample included 3,061 (69.7%) palonosetron users and 1,333 (30.3%) controls treated with another 5-HT3-RA. The palonosetron group was younger (mean 57.1 vs. 58.2 years, p=.001), had more women (72.6% vs. 65.4%, p<.001) and more breast cancer (49.7% vs. 38.7%) than the control group. In unadjusted comparisons, 19.4% of palonosetron users had CINV compared to 31.8% of controls (p<.001). After controlling for between-group differences with logistic regression, the odds ratio of CINV among palonosetron users vs. controls was 0.58 (95% CI 0.50-0.68, p<.001).

Conclusion: Among cancer patients treated with a MEC regimen, those treated with prophylactic palonosetron had significantly less post-chemotherapy CINV-related health care utilization or antiemetic use than users of another 5-HT3-RA.

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FATIGUE DOES NOT EXPLAIN THE IMPACT OF PHYSICAL ACTIVITY (PA) ON HEALTH-RELATED QUALITY OF LIFE (HRQL)

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Objectives: To assess whether the relationship between HRQL and PA is explained by the relationship between HRQL and fatigue in pediatric patients receiving chemotherapy for cancer.

Methods: Between 11/12/09 and 11/11/10, 24 pediatric oncology patients between 8 and 18 years of age completed the study. HRQL was assessed using PedsQL 4.0 and PedsQL 3.0 Cancer Module. PA was assessed by actigraphy as average daily activity counts. Fatigue was assessed by the Childhood Cancer Fatigue Scale. Pearson's correlations were computed between HRQL and PA as well as between HRQL and fatigue. The statistical significance of the difference between correlations was calculated.

Results: The correlation was significant between PA (mean=263,000 counts, range 47,000 to 433,000) and the PedsQL 3.0 scores from patients for nausea (r=0.43; p=0.04) and the PedsQL 4.0 scores from parents for overall HRQL (r=0.52; p=0.01) and physical (r=0.59; p<0.01). Both patients and parents demonstrated significant correlations between fatigue and the PedsQL 3.0 scores for pain (r=0.58; p=<0.01 and r=0.50; p=0.02, respectively). The correlation also was significant between fatigue scores and PedsQL 4.0 total HRQL score and school function in patients as well as PedsQL 3.0 cognitive domain in patients and worry domain in patients and parents. The correlation between PedsQL 3.0 treatment anxiety domain and PA was significantly different from the correlation with fatigue (p=0.04).

Conclusions: Although PA and fatigue both significantly correlate with HRQL in pediatric oncology patients, different domains of HRQL are affected. Future research is needed to understand how PA affects HRQL.

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OCTYL GALLATE ENCAPSULATION IN LIPID NANOPARTICLES IMPROVES ITS ANTI-TUMOR ACTIVITY AND AMELIORATES ITS RENAL AND HEPATIC TOXIC EFFECTS

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Therapies used in advanced cases of melanoma such as chemotherapy, radiotherapy, biochemical therapy and vaccines, seem to be incapable to cure or improve survival rates of patients, making melanoma one of the most treatment-refractory malignancies. Furthermore, patient responses to chemotherapy are variable and often associated with significant degrees of toxicity and adverse side effects. This study evaluated the toxic effects and anti-melanoma activity of octyl gallate (G8, a molecule for which our group described an anti-melanoma activity), in a free form or incorporated into lipid nanoparticles, using a melanoma murine model. The nanoparticles G8-free or G8-full were produced and characterized physicochemically. G8 nano-encapsulation did not potentiate the antitumor activity of the compound, however, the side effects were ameliorated. Changes in body weight, hematological parameters, hepatic and renal function as well as the oxidative *status* of the liver were evaluated. A significant decrease of weight gain was observed in mice treated with free G8. Animals also showed other signs of toxicity such as endophthalmitis, piloerection, cachexia, ptosis, and dyspnea, which were not observed in animals treated with nano-encapsulated G8. Likewise, the biochemical and histological studies of hepatic and renal function showed that free G8 produced liver and kidney damages, which

were not detected in mice treated with nano-encapsulated G8. Interestingly, the compound kept its antitumoral activity after nano-encapsulation, observed by the decrease of tumor nodules as well tumors size in lungs. Further studies are in course to investigate the mechanism of action of G8-free and nanoparticles G8-full.

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CHEMOTHERAPY INDUCED NAUSEA AND VOMITING FOLLOWING PROPHYLACTIC 5-HT$_3$-RA ANTIEMETIC TREATMENT IN HIGHLY EMETOGENIC CHEMOTHERAPY

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Objective: To compare the risk of chemotherapy induced nausea and vomiting (CINV) following prophylactic use of palonosetron vs. another 5-hydroxytryptamine-3 serotonin receptor antagonists (5-HT3-RA) in patients treated with a highly emetogenic chemotherapy (HEC) regimen.
Method: This was a retrospective cohort analysis using HIPAA-compliant claims in a commercially-insured U.S. patient population. The study included HEC-treated breast, lung, or colon cancer patients receiving a prophylactic 5-HT3-RA between 4/1/2008 and 3/31/2009. Patients were followed during the first cycle of single-day chemotherapy. Baseline variables included demographics, cancer type, and comorbidity. The primary outcome was occurrence of CINV, defined as an antiemetic infusion or a medical claim with a primary diagnosis of nausea and vomiting (ICD-9-CM 787.0x) or volume depletion (276.5x) on any day following chemotherapy. Multivariate analyses adjusted for baseline differences between groups.
Results: The final sample included 1,518 patients 1,184 (78.0%) palonosetron users and 334 (22.0%) controls treated with another 5-HT3-RA. The palonosetron group was younger (mean 53.1 vs. 51.9 years, p=.046), but no differences were found on gender or cancer type when compared to the control group. In unadjusted comparisons, 9.7% of palonosetron users had CINV compared to 13.8% of controls (p=.033). After controlling for between-group differences with logistic regression, the odds ratio of CINV among palonosetron users vs. controls was 0.59 (95% CI 0.69–1.00, p=.049).
Conclusion: Among cancer patients treated with a HEC regimen, those treated with prophylactic palonosetron had significantly less post-chemotheray CINV-related health care utilization or antiemetic use than those treated with another 5-HT3-RA.

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PALLIATIVE ENDOPROSTHESIS IN INOPERABLE MALIGNANT STENOSES LOCATED ON THE CERVICAL ESOPHAGUS AND PHARYNGO-ESOPHAGEAL JUNCTION

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Aims: Upper polar esophageal malignant tumors, pharyngo-esophageal malignant tumors and vicinity malignant tumors involving the hypopharynx and the esophagus, in inoperable stages, pose serious technical problems in the case of prosthesing.
Method: We have performed an esophageal endo-prosthesing through a laparogastroscopic approach (an original, innovative procedure internationally awarded in Japan, in 2005) on 21 patients with cervical and pharyngo-esophageal malignant stenoses. The ortograde endoscopic insertion of a catheter was impossible on these patients, all of them being proposed for gastrostomy.
Results: The patients were in advanced stages, with distant disseminations and cachexy. Upper polar esophageal locations (in 17 cases), especially the pharyngo-esophageal ones (in 4 cases), presented particularities that made prosthesing very difficult, because of the vicinity of the larynx and the risk of aspiration. In these cases we used a special type of prosthesis. A particular group is made up by the patients who were cannulated post laryngotomy.
Conclusions: This prosthetic mini-invasive procedure is a less aggressive one; the approach is gastroscopic, the prosthesis being inserted by traction, and not by pushing, as in the endoscopic procedures. Our original procedure allows for prosthesis placement in upper locations in which, according to some authors, prosthesing is not possible.

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THE ROLE OF PALLIATION IN PANCREATIC CARCINOMA OF THE HEAD OF THE PANCREAS

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Aim: The pancreatic cancer is, in fact an incurable disease, because, even after radical interventions, most patients

succumb because of the cancer extension and complications. In the absence of the treatment the one year survival is about 20%, and at 5 years is 0%.

Method: Most patients are not selected for radical interventions because of the advanced stages of the disease at the moment of the diagnostic. For them, the palliative surgery represents the only hope of a decent survival.

We studied a lot of 220 patients with mechanic jaundice, 143 with cancer of the pancreatic head. We made pancreaticoduodenectomy in 18 cases. For the rest of 125 patients we performed palliative interventions.

Results: The minimally invasive palliative interventios had been performed for necessity at patients with advanced cancer (stages III and IV), biological exhausted. In this way, we could avoid a major anaesthetic and surgical trauma, and the patients retrieving was made in suitable conditions with a mean of hospitalization period of 7 days (21 days in the cases of pancreaticoduodenectomy).

Conclusions: We didn't noticed a significant difference about postoperative survival of these two category of patients. At two years the survival rate for the patients with pancreaticoduodenectomy was 35%, and 31% for those with palliation.

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INCREASED SERUM NEURON SPECIFIC ENOLASE AFTER EPILEPTIC EPISODES IN PATIENTS WITH A BRAIN BREAST CANCER METASTASIS

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Purpose: To evaluate the prevalence of the neuron specific enolase (NSE) as an indicator of the epileptic episodes in patients with brain metastasis of breast cancer.

Methods: Two groups of patients with brain metastasis were studied, one group having known seizure episodes and a no seizure group (control). The NSE level was measured in all patients from the epileptic group at 12, 24, and 36 hours after an epileptic episode. For the non epileptic patients the NSE level was measured twice at two weeks interval.

Results: The seizure group showed a significantly incresed level of NSE tumor marker with the highest value of 42,7 ng/dL (12 h), 36,2 ng/dL (24 h), 24 ng/dL 36 hours after the epileptic episode. An incresed level of NSE was also found in the patients with no seizure episode, with a mean value of 12,41±3.34 ng/dL.

Conclusion: The NSE tumoral marker is significantly increased in the patients with a breast cancer cerebral metastasis, responsible of epileptic episodes. The future objective of this study is to determine if the high level of the neuron specific enolase can be used to confirm the diagnosis of a presumed seisure activity.

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IN A HIGH-DOSE MELPHALAN SETTING, PALIFERMIN COMPARED TO PLACEBO HAD NO EFFECT ON ORAL MUCOSITIS OR RELATED PATIENT'S BURDEN

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This RCT studied the efficacy of palifermin in a chemotherapy-only transplant setting, to reduce maximum OM severity, patient-reported outcome (PRO) and health-care burden including medical resource use. Palifermin, relative to placebo was given either pre/post-HDM or pre-HDM in patients with multiple myeloma (MM) undergoing ASCT at 39 European centres. Oral cavity assessment (WHO), PRO questionnaires (OMDQ, FACT-E, EQ 5D and MCSQ) were used in 281 patients (mean age 56, ±SD= 8 years). 109 patients were randomized to pre-HDM, receiving palifermin (60 μg/kg/day) iv for 3 consecutive days before HDM and 115 subjects were randomized to pre/post-HDM receiving palifermin on 3 consecutive days before HDM and after ASCT. 57 patients received placebo. There was no statistically significant difference in maximum OM severity. Severe OM occurred in 37% (placebo), 38% (pre/post-HDM) and 24% (pre-HDM) of patients. No difference was observed with respect to PRO assessments or medical resource use. Opioids use was lower in palifermin groups (77, 67 and 64%, respectively). More significant infections and FN were reported in pre/post-HDM versus placebo (eg. 51% and 26%). The lack of efficacy of palifermin might be explained by timing of the palifermin post-dose relative to OM development. HDM,

an one-day regimen leads to an interval of only two days from start of conditioning to start of the post-dosing. To conclude, palifermin didn't show an effect on OM, most likely due to the timing interval. Consequently, palifermin was unable to reduce OM or OM -related patient's burden in MM transplant patients.

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PHYTOCHEMICAL CHARACTERIZATION OF *CROTON CELTIDIFOLIUS* LATEX AND ASSESSMENT OF CELL TOXICITY AND ANTITUMORAL EFFECT

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Croton celtidifolius (Euphorbiaceae) is a tree found in the Atlantic Forest in Southern Brazil where is commonly known as Sangue-de-Dragão. Its latex is used traditionally for treating ulcers, diabetes and cancer. The cytotoxicity *in vitro* and antitumor activities *in vivo* were evaluated in this work. The phytochemical study showed that its latex have high phenol contents (flavonols and flavan-3-ols) and it was able to reduce cell viability in the MTT assay performed with Ehrlich Ascites Carcinoma (EAC) and MCF-7 (IC_{50}= 169±1.8 and 187±2.2 mg/mL, respectively). The latex caused a significant DNA fragmentation and increased apoptotic cells numbers (NC: 12%; Latex: 41%) by differential staining EB/AO assay. The *in vivo* latex treatment (C1: 0.78; L2: 1.56; C3: 3.12 mg/kg/day) showed that C2 and C3 reduced body weight (C2: 8.10±1.96; C3: 7.57±2.04 g, respectively) and increased mean survival time (MST) (C1: 15.5; C2: 16; C3: 17.5 days) when compared to the negative control group (MST: 13 days). In addition, at the highest latex concentration tested there was a 56% inhibition of tumor growth**.** Therefore, these results are in line with ethnopharmacological reports since *Croton celtidifolius* latex showed cytotoxicity and antitumor activity and a possible mechanism of antitumoral action could be addressed to DNA fragmentation, which could lead to a blockage of cell survival and induction of apoptosis.

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DENTAL REHABILITATION OF PATIENTS WITH RHABDOMYOSARCOMA: A CASE REPORT

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Objectives: Rhabdomyosarcoma (RMS) is a malignant, soft tissue neoplasm consisting of cells derivered from the primitive mesenchyme that exhibit a profound tendency to myogenesis. About 35% of RMS arises in the head and neck. Different protocols have been developed over the past years to treat this tumour and different combinations of radiotherapy, surgery and chemotherapy were used. This treatment has a marked effect on growth of soft and hard tissues in the affected regions of the head and face, leading to facial and dental abnormalities that become evident with growth. Here we aimed to discuss implant assisted dental rehabilitation and affect of cancer therapy on oral and dental health in children with maxillofacial tumours.
Case: A maxillary rhabdomyosarcoma patient who had received radiotherapy referred to our clinic first at the age of 3 and after15 years of intermittant follow up period he became total edentulous. He had growth retardation and microstomia which were complaints depending on the purchase of high-dose radiotherapy.
Results: The patient was treated with eight dental implants, four in each arch, and fixed prosthesis in maxilla and mandible for dental rehabilitation. The patient has been followed up for one year.
Conclusion: Dental rehabilitation is central to general health, level of nutrition, quality of life, and is significant in the holistic care of children after cancer therapy.

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DENTAL CARE PLANNING AND DOSIMETRY COMMUNICATION TOOLS FOR DENTISTS AND RADIATION ONCOLOGISTS IN MANAGING H&N CANCER PATIENTS

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Purpose: To describe communication tools for use by radiation oncologists and dentists/oral surgeons to facilitate dental care before and after radiation.
Methods: We developed
1) a dental care planning communication tool (completed by the radiation oncologist) including cancer stage, primary site, radiation treatment plan, and dental diagram. Estimated planned dose to dental regions or specific teeth (identifying teeth at high risk for osteoradionecrosis), and the anticipated level of xerostomia (mild, moderate, severe) were included.
2) a radiation dosimetry overlay on radiation planning CT images with dental windowing to display dental and jaw structures to communicate planned or final dose delivered.

Results: The tools were used in several patients to communicate with local dentists/oral surgeons prior to radiation simulation, and after completion of dose planning. This facilitated commication of dental status and with planning extractions and restorations. The communication tools were presented to our local Dental Association and received a favorable response.
Conclusions: We developed tools to facilitate communication between radiation oncologists and dentists/oral surgeons for the pre-radiation and post-radiation management of the teeth. These tools may be refined in collaboration with additional oral medicine specialists and radiation oncologists to help standardize communication and dental management in the H&N cancer patient.

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MOVING BEYOND "CHEMOBRAIN": UNDERSTUDIED NEUROBEHAVIORAL CHANGES FOLLOWING HEMATOPOIETIC STEM CELL TRANSPLANT

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Objectives: Researchers have examined the potential neurotoxic effects of cancer and hematopoietic stem cell transplant (HSCT). Although survivors may experience increased neurocognitive impairment (e.g., memory problems), there is little research related to neurobehavioral functioning (i.e., behavioral signs/symptoms associated with neurological dysfunction, such as apathy). The purpose of this preliminary study is to describe HSCT survivors' neurobehavioral functioning from pre- to post-HSCT.
Methods: Survivors (n=27) 9-months to 3-years post-HSCT used the Frontal Systems Behavior Scale to report pre-HSCT and current apathy, disinhibition and executive dysfunction. Paired t-tests and McNemar tests were used to explore differences in neurobehavioral functioning. Descriptive statistics were examined to determine the frequency with which each behavior was endorsed.
Results: Executive dysfunction was the most frequent problem reported (pre-HSCT = 22.2%; current = 33.3%) followed by apathy (pre-HSCT = 11.1%; current = 29.6%). Compared to pre-HSCT levels, survivors reported greater current apathy (p=.005) and higher total impairment (p=.005). Based on the frequencies noted, there was also a trend toward survivors being more likely to meet clinical cut-off for borderline levels of apathy currently (p=.063).
Conclusions: Although studies have noted neurocognitive difficulties among HSCT survivors, our results suggest that neurobehavioral symptoms, especially those related to executive dysfunction and apathy, may also be present in a significant minority of survivors. Furthermore, apathy may be more likely to increase following HSCT. Since apathy and executive dysfunction are often confused with other diagnoses, including depression, understanding the nature of these symptoms has implications for intervention. This preliminary retrospective evidence highlights the need for longitudinal research in this area.

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SYMPTOM CLUSTERS PREDICT PROGNOSIS IN ADVANCED CANCER

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Objectives: We evaluated the association between identified SC in a prior analysis and subsequent survival in advanced cancer. We also determined whether survival differed among patients by number of prognostic SC present.
Methods: This was a post hoc analysis of previously reported symptom data of 922 consecutive advanced cancer patients. Hierarchical cluster analysis identified seven clusters. Among 831 patients with survival data, we assessed the univariable and multivariable prognostic effect of each cluster on survival after data collection. Stepwise Cox and Kaplan-Meier survival analyses were conducted.
Results: Three of the seven SC were prognostic for shorter survival in both the univariable analysis and multivariable analyses: the fatigue/anorexia-cachexia, aero-digestive, and debility clusters. The hazard ratios (95% CI) from the

multivariable model revealed that those who had these SC had a 20–40% increased risk of death compared to people who did not. When age, gender, and performance status (PS) were included in a further multivariable analysis, PS was significant; the debility cluster was no longer significant. Survival duration was shorter as the cumulative number of the three clusters present increased.

Conclusions: The fatigue/anorexia-cachexia, aero-digestive, and debility clusters had a statistically and clinically important negative association with survival in advanced cancer. The debility cluster was prognostic for survival, but was no longer significant after adjustment for PS. The debility cluster appeared to be a proxy for PS. Length of survival post-referral was shorter as the number of these clusters present increased.

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EFFICACY AND TOLERABILITY OF MEDICAL OZONE GAS APPLICATIONS IN 24 PATIENTS WITH OSTEONECROSIS OF THE JAWS (ONJS) TREATED WITH BISPHOSPHONATES

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Objectives: Update the efficacy and tolerability of medical gas ozone (0_3) applications in healing ONJ in patients treated with BPs.

Methods: 24 patients (median age 60 ys; 12 female) with bone metastases due to various cancers: prostate (5), breast (11), myeloma (1), lung (4), or osteoporosis (3), and with ONJ lesions ≥2.5 cm previously treated with nitrogen containing BPs without dental preventive measures, were observed and treated with locally 0_3 gas applications every third day for at maximum of 15, by means of a special bell to avoid 0_3 diffusion. Azithromicin 500 mg/day was administered for 10 days prior the O_3 gas applications.

Results: Six of 24 patients interrupted the treatment before the 10th 0_{33} gas applications we observed for the remaining patients the sequestrum of the necrotic bone, and in 6 of them its expulsion was spontaneous with oral mucosa re-epithelization. No patient reported adverse events. Patients with the largest and deeper ONJ lesions, O_3 gas therapy produced the sequestrum of the necrotic bone after a median of 15 applications, however surgery was necessary to remove it. Of interest, removal was possible without the resection of healthy mandible edge because of the presence of bone sequestrum. In all patients treated with O_3 gas +/− surgery, no ONJ relapse appeared (follow-up range 1–3 years). application for fear of an experimental therapy (1 pt) or disease progression. After a median of 10 O.

Conclusions: Medical 03 gas administrations are effective and safe for patients treated with BPs who developed ONJ.

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A PROSPECTIVE DOSE-RESPONSE STUDY OF THE EFFECTS OF CHEMOTHERAPY ON COGNITION IN EARLY-STAGE BREAST CANCER PATIENTS

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Objectives: Recent studies have shown cognitive disturbances in chemotherapy treated cancer patients but it is difficult to establish whether these are caused by the chemotherapy or other confounding factors. This study addressed this issue by use of a "dose-response" design: If cognitive changes are caused by neurotoxic effects of chemotherapy, they should worsen with cumulative chemotherapy exposure.

Methods: Fifty-five women with early stage breast cancer were matched individually to 55 healthy women on age and education. Participants were aged 65 or younger and had no previous history of cancer or chemotherapy. The assessment entailed both pencil-and-paper and computerized neuropsychological tests. Assessments were performed prior to commencing chemotherapy and then again following each chemotherapy cycle (or at equivalent intervals in the control group). An overall cognitive summary score was computed for each testing session by standardizing all neuropsychological scores to the mean and standard deviation of the control group and then summing across all scores. We used hierarchical linear modeling to compare change in cognitive function over time between the groups.

Results: There was a significant group difference in the trajectory of neuropsychological performance over time ($p<.01$). Compared to controls, chemotherapy patients' performance successively declined following each treatment, with the group difference approaching 0.5 standard deviations at its maximum (a moderate effect size).

Conclusions: These results show that neuropsychological test performance progressively worsens with cumulative treatment exposure suggesting a neurotoxic effect of chemotherapy.

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PREVENTION WITH PHALLUS IMPUDICUS CAN DECREASE INCIDENCE OF LYMPHEDEMA IN PATIENTS WITH GYNECOLOGIC CANCER AFTER LYMPH NODE DISSECTION

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Objective: Lymphedema of lower limb after lymph node dissection is a frequent and extremely stressful complication. Based on the experience with the therapy for the post-thrombotic syndrome we propose the treatment effect of Phallus impudicus (PI) in prevention of lymphedema.
Methods: In present comparative study 64 patients with endometrial, ovarian, uterine and cervical cancer after lymph node dissection and postoperative radiation were preventively treated over a period of two years and follow up for 4 years. PI was used in doses 20 and 50 ml/day in liquid extract and additionally applied to the legs in the form of 25% ointment 2 times/day.
Results: Fifty two patients from control group (52/68) developed lymphedema. The median time from operation to occurrence of lymphedema were 3,2 months. Most vulnerable group - cervical cancer patients. Twenty one patient (21/64) with PI prevention developed lymphedema during an observation period of four years. The median time from operation to occurrence of lymphedema were 11,8 months. Vulnerable group—ovarian cancer. The patients from both groups have used exercises, limitation of work and activities that are too vigorous or repetitive and compression sleeve.
Conclusions: PI 20 ml/day per os with topical 25% ointment application 2 times/day could be considered as a remedy for lymphedema prevention. The mechanism of action of PI extract can be explained by cytokines and inflammatory-relevant adhesion molecules regulation, exudates viscosity reduction, recanalization of obstructive lymphatic vessel after postoperative radiation. PI could be recommended for postoperative and postradiative care for subclinical lymphedema.

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DISSEMINATION OF COGNITIVE-BEHAVIOR THERAPY TRAINING FOR PSYCHOSOCIAL ONCOLOGY CLINICIANS

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For many cancer survivors, suffering does not end with the conclusion of treatment. One-third to one-half of survivors experience clinically significant levels of psychological distress. Research shows that cognitive-behavioral therapy (CBT) is an effective treatment for distress in medical populations.
While awareness of CBT is widespread among American providers of psychosocial oncology care, we found that 48% of these providers either do not use CBT or describe themselves as less than competent with CBT techniques. Therefore, we developed a series of training workshops with a grant from the National Cancer Institute.
The first two workshops were completed in 2010. A total of 82 trainees learned how to implement a comprehensive CBT intervention previously developed and tested (DuHamel et al., 2010). The 6-item Self-Efficacy Questionnaire (SEQ) was used as a pre/post measure.
Effectiveness of the training was evaluated on two primary variables: quality ratings and improvement in self-efficacy. On a 1 (poor) to 5 (excellent) scale, the mean score for quality of content of the lectures was 4.27 in the first workshop (n=40), and 4.44 in the second workshop (n=42). Trainees rated the lectures as meeting or exceeding their expectations 94.4% of the time at the first workshop and 99.7% of the time at the second workshop. During both workshops, trainees' confidence in their ability to apply CBT skills improved (mean SEQ score of 13 pre-workshop, 18 post-workshop; $p<.05$).
The training fosters improved self-efficacy in psychosocial clinicians to deliver CBT-based treatment and addresses an important public health need.

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LUNG CANCER PATIENTS' BELIEFS ABOUT COMPLEMENTARY AND ALTERNATIVE MEDICINE IN THE PROMOTION OF THEIR WELLNESS

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Objective: Cancer patients are increasingly turning to complementary and alternative medicine (CAM) because they believe that conventional treatments are not optimizing their overall wellness. However, the relationship between CAM use, wellness, and patient beliefs has received little attention in the nursing literature. This study aimed to understand lung cancer patients' beliefs about CAM use in promoting their own wellness.
Methods: An interpretive qualitative design guided the study. Semi-structured interviews were conducted with 12 adult lung cancer outpatients who used CAM. An inductive

approach to analysis was taken; this included immersion in the data, open coding, categorization of similar codes, and identification of emerging patterns and themes.

Results: The patients' beliefs about CAM use in promoting their own wellness were the result of an ongoing adaptive process of belief modification and reformation/transformation that began with their cancer diagnosis. This evolution of patient beliefs comprised four main themes: processing the initial upheaval of beliefs into a life change; developing beliefs that motivated CAM use; validating their new beliefs; and synthesizing these experiences and belief changes into a personal philosophy/meaning of "wellness with cancer."

Conclusion: CAM, as a strategy to promote wellness, played an integral role in the experience of wellness with cancer. Patients' experiences with CAM were governed by their underlying beliefs; thus, clinicians should consider their patient's beliefs when discussing CAM strategies. Health professionals also need to be sensitive to the patient's adjustment trajectory and harmonize their interventions with the evolution of the patient's illness and beliefs about promoting wellness.

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A PILOT STUDY OF TASTE CHANGES AMONGST HOSPICE PATIENTS WITH ADVANCED CANCER

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Objectives: We evaluated hospice in-patients with advanced cancer about subjective changes in their appetite, taste sensation, and food preferences. This was accompanied by objective taste evaluation using standard chemical tests.

Methods: We recruited 15 consecutive hospice in-patients. On day 1, patients were questioned about subjective taste changes, food preferences, and daily dietary intake using a structured questionnaire. A 27- food item checklist provided food preferences based on the four basic taste senses. On day 2, a modified forced choice 3-stimulus drop test was performed for objective taste evaluation.

Results: There were 7 males, 8 females; median age 68 years (range 49–84). None had received either radiation or chemotherapy recently. The majority had both subjective and objective taste changes. Most thought all food was tasteless followed by loss of sweet sensation and meat aversion. About half of the participants exhibited anorexia and weight loss with decreased energy intake. Both detection and recognition thresholds for these basic tastes were abnormal for the majority of participants. Median energy intake for all was 1475 kcal/d (range 224–2137). Reduced sensitivity for sweet and salt taste and altered perception for sour predominated in formal taste testing.

Conclusions: All four basic taste sensations were affected to various degrees. Lost of taste for all food, decreased sensitivity for sweet, and altered sensation for bitter taste were common subjective changes. Decreased sensitivity for sweet and salt taste, and altered sensation for sour were predominated in the objective taste evaluations.

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CANDIDIASIS PREVENTION WITH FLUCONAZOLE IN HEAD AND NECK RADIOTHERAPY: RATES OF MUCOSITIS IN THE PROPHYLAXIS VERSUS THE USUAL CARE GROUP

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Objectives: To compare the rates of mucositis during treatment of head and neck cancer with radiation therapy +/− chemotherapy in patients given prophylactic dosing of fluconazole (FCZ) versus our "usual care group" (UCG).

Methods: We previously reported infection rate outcomes from a retrospective analysis of 181 patients managed with prophylactic dosing versus UCG showing significant differences in infection rates 46/109 (42%) vs 3/72 (4%) $p<0.001$. Prophylaxis group received FCZ 200 mg po twice per week (at least 3 days apart) commencing the first week of radiation for 15 weeks. Treatment in the UCG was FCZ 400 mg po day 1, then 200 mg po days 2–7 in patients developing overt candidiasis. In the current analysis we evaluated the rates and grades of ulcerative mucositis (RTOG scale) during week 5 of treatment.

Results: Mucositis data was available in 161/181 (89%) patients. At week 5 in the UCG 83/93 (89.3%) developed grade 2 or higher mucositis versus 48/68 (70.6%) in the prophylaxis group (p value=0.003). This difference remained when comparing the prophylaxis group versus the subset of patients in the UCG that received FCZ and the one that did not (p values=0.02 and 0.01 respectively).

Conclusions: Low dose twice a week prophylactic FCZ is associated with a lower rate of development of candida infection and mucositis at week 5 compared with patients in the UCG. It appears FCZ may lower both infection and ulceration suggesting an interaction between the two endpoints. A prospective controlled randomized trial is being considered.

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AFRICAN AMERICANS' AND LATINOS' PERCEPTIONS OF PRE-COLONOSCOPY HYPNOSIS

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Objectives: Although colorectal cancer (CRC) screenings can effectively detect and prevent cancer, a large portion of African Americans and Latinos do not adhere to colonoscopy recommendations. Research suggests that anticipatory distress can significantly hinder minorities' compliance with colonoscopy recommendations. There is significant promise that hypnosis may effectively reduce such distress. The current study examined African Americans' and Latinos' perceptions of using hypnosis prior to a colonoscopy.
Methods: Latinos (N=108) and African Americans' (N=105) who received a primary care physician recommendation for a colonoscopy were recruited to participate in the study. Participants (*N*=213) completed the following assessments over the phone: demographics and perceptions of pre-colonoscopy hypnosis.
Results: The results found that 69.9% of the sample expressed favorable perceptions of using hypnosis prior to having a colonoscopy, although there was notable variability. Of the 213 participants, 14.1% of the participants expressed entirely favorable perceptions (total score = 40), 54.8% reported ambivalent perceptions (total scores between 1 and 39) and 31.1% reported entirely unfavorable perceptions (total score = 0).
Conclusions: Overall, pre-colonoscopy hypnosis was generally well-accepted by minorities. The results from this study suggest the importance of screening perceptions of pre-colonoscopy hypnosis in order to guide clinical decision making and inform future research efforts.

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DEMOGRAPHIC PREDICTORS OF SYMPTOM PREVALENCE IN ADVANCED CANCER

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Objectives: We aimed to identify the dominant predictor of symptoms from age, gender, performance status (PS), and primary site in advanced cancer.
Methods: Recursive Partitioning Analysis (RPA) identified the dominant predictors of 38 symptoms in 948 consecutive patients. RPA split data into two categories. It assessed all possible data splits for the four variables and selected the one that maximized the prevalence difference between the two categories.
Results: Median age was 65 (range 12–94 years); 55% were male; 65% had ECOG PS 3–4. Most common cancers: lung, genitourinary, and gastrointestinal. Gender was not a dominant predictor for any symptom. Age was the dominant predictor for sleep problems, depression, nausea, anxiety, vomiting, headache, tremors, and black-outs. Symptom prevalence declined with age. PS was the dominant predictor for pain, easy fatigue, weakness, anorexia, lack of energy, constipation, early satiety, taste changes, confusion, memory problems, sedation, hiccough, hallucinations, and mucositis. Various cancer primary sites were the dominant predictor for dry mouth, dyspnea, weight loss, cough, edema, hoarseness, dizziness, dyspepsia, dysphagia, belching, bloating, wheezing, itching, and diarrhea. Head&Neck and pancreas cancers individually were both dominant predictors for dysphagia and belching, respectively. Only 2 symptoms (aches/pains and dreams) had no dominant predictor.
Conclusions: 36 symptoms had a dominant demographic predictor. Age was the dominant predictor for 8; the influence was unidirectional. Gender did not predict any symptom. PS was the dominant predictor for 14 symptoms; the influence was bidirectional. Head & Neck and pancreas cancers had clinically and statistically significant influence over symptom prevalence.

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CANCER-RELATED-FATIGUE(CRF) IS ASSOCIATED WITH IL-6, IL-6R AND IL-17, WHILE IL-8 &IL-6 ARE ASSOCIATED WITH NO IMPROVEMENT OF CRF AFTER TREATMENT

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Objectives: Inflammation is implicated in the development of cancer related fatigue (CRF). However there is limited literature on the mediators of inflammation(namely), cytokines and their receptors, associated with clinically significant fatigue and response to treatment.
Methods: We reviewed 37 advanced cancer patients with fatigue(≥4/10), who participated in two placebo controlled Randomized Controlled Trials of anti-inflammatory agents (Thalidomide and Dexamethasone) for CRF. Responders showed improvement in FACIT-F subscale at the end of study (Day 15). Baseline patient characteristics and symptoms were assessed by FACIT-F, ESAS; serum

cytokines [IL-1β and receptor antagonist (IL-1RA), IL-6, IL-6R, TNF-α and sTNF-RI & RII, IL-8, IL-10, IL-17] levels by Luminex. Data were analyzed using principal component analysis (PCA)[reporting cumulative variance (variance) for the first four components] to determine their association with fatigue and response to treatment.

Results: Females were 54%. Mean (SD) was as follows for age, 61(14); baseline FACIT (F) scores, 21.4(8.6); ESAS-Fatigue item, 6.5(1.9); and FACIT-F change, 6.4(9.7); ESAS(fatigue) change, −2 (2.41). Baseline median in pg/mL for IL-6, TNF-α, IL-1β were 31.9; 18.9; 0.55, respectively. Change in IL-6 correlated with change in FACIT-F scores (p=0.02). Baseline CRF (FACIT-F score) was associated with IL-6, IL-6R and IL-17, Variance = 78% whereas IL-10, IL-1RA, TNF-α and IL-1β were associated with improvement of CRF, Variance = 74%. Conversely, IL-6 and IL-8 were associated with no improvement or worsening of CRF, Variance = 93%.

Conclusions: IL-6, IL6R and IL-17 are associated with CRF while IL-6 & IL-8 were associated with no improvement of CRF. Further studies are warranted.

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COMPARISON OF MEDICAL EXPENDITURE ACCORDING TO TYPE OF HOSPICE CARE

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Background: This study compared medical expenditure according to type of hospice care, Ward-type (WT, in Hospice Care Unit) and Scattered-type (ST, in General Ward) in Seoul Veterans Hospital.

Methods: We enrolled terminal cancer patients who were registered in Hospice Care Unit (HCU) and died during the same admission period in SVH from January 2009 to December 2009. These patients were allocated into two groups: inpatient care in WT and ST. Medical expenditure in terms of daily general medical costs, analgesic costs, antibiotic costs, nutritional costs, laboratory test costs and radiological costs were compared between the these two groups.

Results: A total of 104 patients were enrolled and allocated into WT (n=32) and ST (n=72). The average daily medical expenditure per person was significantly lower in WT than the ST (p<0.001). Daily costs of parenteral nutrition, laboratory blood tests were also significantly lower in WT than ST (p=0.002 and p=0.005, respectively) but there were no significant differences in costs of antibiotic and analgesic aspects. There were no cases of patient to transfer for intensive care unit in WT, but twelve (17%) in ST had been admitted in intensive care unit during hospice care period. One(3%) in WT received blood products, but 13(18%) of in ST received blood products in hospice care period.

Conclusion: For terminal cancer patients care, we can reduce the hospice care expenditure in WT instead of in ST in terms of costs of parenteral nutrition, laboratory blood tests as well as total daily cost per person.

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CANCER SYMPTOM CLUSTERS: CLINICAL AND RESEARCH METHODOLOGY

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Objectives: Cancer patients experience multiple symptoms which frequently appear in groups or clusters. We conducted a clinical review of cancer symptom cluster studies to identify common symptom clusters (SC), explore their clinical relevance, and examine their research importance.

Methods: Published studies and review articles on cancer SC were obtained through literature search. We identified 60 reports. These varied in assessment instruments, outcomes, design, population characteristics, and study methods.

Results: Two main approaches to symptom cluster identification were found: 1) clinical 2) statistical. Clinically determined SC were based upon observations of symptom cooccurrence, associations or interrelations. These included fatigue-pain, fatigue-insomnia, fatigue-insomnia-pain, depression-fatigue, and depression-pain. They were analyzed by multivariate analysis. They had low to moderate statistical correlations. Disease or treatment related SC were influenced by primary cancer site, disease stage, or anti tumor treatment. SC determined by statistical analysis were identified by factor and cluster analysis through non-random symptom distribution. Nausea-vomiting, anxiety-depression, fatigue-drowsiness, and pain-constipation consistently clustered by either or both of these statistical methods. The individual symptoms of pain, insomnia, and fatigue often appeared in different clusters. A consensus about standard criteria and methodological techniques for cluster analysis should be established.

Conclusions: Several important cancer SC have been identified. Nausea-vomiting, anxiety-depression, and dyspnea-cough clusters were consistently reported. The techniques of symptom cluster identification remain a research tool, but one with considerable potential clinical importance. Further research should validate our analytical techniques, and expand our knowledge about SC and their clinical importance.

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SYMPTOM BURDEN INDEX: A NEW MEASUREMENT

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Objectives: We developed a symptom burden index (SBI) to capture the combined impact of prevalence, severity & distress of multiple symptoms & assessed the relation of patient demographics to SBI.
Methods: 46 symptoms were assessed in 181 consecutive advanced cancer patients. Symptoms were measured for severity & distress (distressful or not). Age was analyzed as ≥65 vs <65 yrs; ECOG PS1 vs PS2 vs PS3-4. For each symptom a SBI was calculated: SBI = Modified Symptom Severity Score (MSSS) × 10 (if distressful). MSSS was calculated as the severity score times a multiplier (for none 0×0, mild = 1 ×1, moderate 2×2, severe 3×4). Total SBI was the sum of all SBI. Logistic regression analysis measured the relationship between demographic factors & TSBI.
Results: Means (95%CI) & p values from univariable analysis were: <65 yrs 217 (186, 248), ≥65 158 (130,186), p=0.005; ECOG PS1 153 (121, 188); ECOG PS2 182 (138, 226); ECOG PS3-4 225 (190, 260), p=0.013; inpatient 154 (121, 187), outpatient 205 (178, 232), p=0.019; male191 (162, 220), female 178 (147, 209), p=0.56; white194 (169, 218), AA 144 (96, 191); others 229 (113, 344), p=0.14. Univariable analysis indicated TSBI increased with age in outpatients & with poor performance. Cancer primary site groups (PSG), gender & race were not related to TSBI. Age, ECOG PS & patient location remained significant in multivariable analysis.
Conclusions: Younger age, outpatient location status, & poor performance were independently related to high TSBI in advanced cancer.

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CODE STATUS DOCUMENTATION: EVERYONE'S RESPONSIBILITY

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Objectives: Timely code status (CS) discussions have recently been associated with fewer ICU consults and CPR attempts in terminally-ill oncology patients. This study of the same patient cohort identified the individuals participating in CS discussions.
Methods: A retrospective review was performed of consecutive patients who died on oncology wards at Princess Margaret Hospital, Canada (admission January 2004-February 2009). Data included details of admission, CS and death. Using chi-square test, outcomes of timely (≤24 hours of admission) and untimely CS documentations were compared based on the individuals participating in the discussions.
Results: CS was documented in 293/315 cases by trainees (n=84), hospitalists (n=83) and staff (n=126). Of these, 253 had chart documentation of the discussion with patients (62%) and substitute-decision makers (SDM) (38%). Patients were more likely to be involved in timely CS discussions (p=0.004). Admitting physicians included trainees (n=172), hospitalists (n=103), and staff (n=40). CS was documented on admission in only 60/293 cases. Staff tended to discuss CS on admission more than hospitalists or trainees (12/40=30%; 16/103=16%; 32/172=19%, p=0.14). 59 more CS were documented within 24 hours of admission (11 trainees, 21 hospitalists, 27 staff) for a total of 119 timely CS. The other 196/315 patients (62%) did not have timely CS documentation.
Conclusions: In this study, timely CS discussion was associated with patient involvement in decision-making. Few CS discussions were on admission. To promote timely CS discussions, education should be directed towards all health care team members, including trainees who represented the majority of admitting physicians in this study.

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THE NURSE PRACTITIONER AND DOCTOR COLLABORATION MODEL IN A LUNG CANCER PRACTICE: IMPROVING EARLY PALLIATIVE CARE

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Objectives: Describe the collaborative model in a busy academic lung cancer practice between a nurse practitioner (NP) and attending physician and perceived benefit to patients based on a literature review. Show graph(s) of the increased numbers of patients with utilizing this model.
Methods: Reviewing the literature looking at studies of early palliative care in cancer, mainly the recent Temel, et al

(2010) early palliative care study in metastatic non-small cell lung cancer patients. Describing in detail, the role of the NP and doctor in my practice, an American, University-based, outpatient oncology practice. Graphing the number of patients seen prior to the collaborative practice and the current number of patients seen, spanning the past 6 years.
Results: The results of the Temel article showed an improvement in quality of life and survival in patients who had additional palliative care visits with either a physician or advance practice nurse. Also, by utilizing the NP in a lung cancer practice to see patients independently for chemotherapy visits or symptom and side effect management, the practice is able to accommodate larger numbers of patients while providing early palliative care described in the Temel article.
Conclusions: A collaborative practice model between an NP and attending physician can increase productivity and also potentially improve palliative care and quality of life based on published studies using a similar, feasible model.

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MAJOR POSTOPERATIVE COMPLICATIONS AFTER ESOPHAGECTOMY FOR CANCER–DIAGNOSIS, TREATMENT, AND CARE IN A LARGE SINGLE CENTER

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The incidence of esophageal cancer in Hebei Province in China is the highest in the world. Our experience in the Department of Thoracic Surgery, Fourth Hospital, Hebei Medical University with the management of postoperative complications following esophagectomy was determined. From September 1952 to December 2005, a total of 20,796 patients underwent an intended esophagectomy for cancer in our department. Data for the outcome of these procedures was sourced from reported articles in the Chinese-language literature. The data were collated to determine the incidence and outcomes of postoperative complications. The incidence of major complications declined over the period of study. The likelihood of anastomotic leakage decreased from 5.0% to 2.3%, and pulmonary complications declined from 3.2% to 1.6%. The surgical mortality rate decreased from 17.1% to 0.6%. The incidence of postoperative complications and deaths following esophagectomy for cancer in our unit has fallen steadily over the past five decades. Improvements in preoperative preparation and postoperative management have contributed to this decrease.

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HOSPICE PHYSICIAN HOME VISIT

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Objectives: Our study objective was to describe hospice physician home visits (HV).
Methods: Data was collected on 30 consecutive patients between 2–7/2010 using a standardized form. Three palliative medicine fellows collected data prospectively on 18, 7, and 5 patients from medical records, hospice team, patient interview, and physical exam. Estimated prognosis was subjective.
Results: Most patients were Caucasian women; median age 67 years (range 26–96). 40% had an ECOG performance status of 4. Estimated prognosis weeks to months. 60% had cancer. 78% HV occurred at home. 73% HV were requested by hospice case managers. Median visit time was 60 minutes (range 20–120); median for travel distance and time were 20 miles and 30 minutes. Reasons for HV were: education, symptom management, psychosocial support, family meeting. There were two problems identified pre-visit but after HV, a median of 5. 1.9 symptoms (range 0–7) were managed per HV. 93% were helpful to patient and/or family, 90% appropriate, and 73% medically necessary.
Conclusions: Physician home visits were time consuming and also considerable travel, and cost. Only two HV resulted in admissions. Physicians provided both education and symptom management. Symptom control was usually pain, although 27 symptoms were identified. Medications were important; all HV included drug review and 2/3 drug change. Physicians in a hospice team had unique responsibilities and identified important issues on physician HV. These included: medication review, change of medication, family emotional support, goals of care, resuscitation, crisis management, symptom crisis, actively dying. Physician HV are an important intervention.

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ANTIBIOTICS SENSITIVITY OF BACTERIA ON THE ORAL MUCOSA AFTER HEMATOPOIETIC CELL TRANSPLANTATION

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Objectives: We recently reported that bacterial substitution occurs frequently on the buccal mucosa after hematopoietic stem cell transplantation (HCT) (Soga Y et al., Support Care Cancer, in press; online available). High dose antibiotics use after HCT may be involved not only in bacterial substitution but also appearance of antibiotics resistant bacteria. The objective of this study is to evaluate the antibiotics sensitivity of bacteria detected after HCT.
Methods: A total of 8 patients who received HCT in Okayama University Hospital were enrolled in this study. Patients had undergone bacterial examination of the buccal mucosa before and after HCT. Microbial identification was performed four times (day −7 to −1; day 0 to +6; day +7 to +13; day +14 to +20) for each patient. Antibiotics sensitivity of identified bacteria was examined.
Results: A total of 110 colonies were obtained from 8 subjects. Five out of 70 Streptococcus strains from 2 patients were multidrug-resistant. One out of 4 Enterococcus strains obtained from 2 patients was also multidrug resistant.
Conclusions: Antibiotics resistant bacteria appeared oral mucosa after HCT. When infection from oral mucositis is suspected, it would be important to evaluate the antibiotics sensitivity, while it is obvious the importance of empiric therapy until obtain the results of antimicrobial susceptibility testing.

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PSYCHOLOGICAL DISTRESS, UNMET NEEDS, SYMPTOM PREVALENCE AND SOCIAL SUPPORT IN CANCER SURVIVORS COMPLETING POTENTIALLY CURATIVE PRIMARY TREATMENT

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Objectives: The physical and psychosocial consequences of cancer can be distressing for many survivors. Identifying those with high levels of distress at treatment completion will enable targeted intervention. This project examined levels of distress and factors which contribute to distress in a sample of Australian cancer survivors completing potentially curative treatment.
Methods: 125 survivors (response rate 85%) completing primary treatment for breast, prostate, colorectal, Hodgkins or diffuse large B-cell lymphomas completed validated measures of distress (Brief Symptom Inventory), unmet need (Cancer Survivors Unmet Needs Survey), social support (ENRICHD Social Support Inventory) and symptom prevalence (Memorial Symptom Assessment Scale).
Results: Haematological survivors reported the highest levels of clinically significant distress (30%), compared to colorectal (26%), breast (18%) or prostate survivors (10%). Mean differences between haematological and prostate survivors were significant ($p<0.003$). Many survivors experienced lack of energy (77%), difficulty sleeping (67%) and feeling drowsy (61%). Those experiencing more physical symptoms reported significantly higher distress than those with fewer symptoms ($p<0.001$). 66% of survivors reported at least one unmet need (mean=5 of possible 35 needs), most frequently reporting need for help managing concerns about cancer returning (25%). Higher distress correlated with symptom prevalence ($r=0.659$, $p<0.001$), unmet needs ($r=0.379$, $p<0.001$) and lack of social support ($r=-0.193$, $p<0.031$).
Conclusions: Many cancer survivors experience psychological distress, unmet needs, sleeping difficulties and other persistent symptoms at treatment completion, requiring increased support. This study highlights the need to identify these issues to allow targeted interventions to improve physical and psychosocial morbidity.

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IMPACT OF THE FAMILY CONFERENCE (FC) IN ACUTE CARE PALLIATIVE MEDICINE (ACPMU)

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Over 800 patients admitted to our ACPMU annually. FC are usual care, formal scheduled meeting (pre-approved by patient) with medical team & family members.

Objectives: Our objectives were to describe FC characteristics, determine family information needs and assess impact of distress to patient-identified spokesperson (SP).
Methods: We developed pre and post FC surveys: 19-questions. Post-FC survey with 1 open-ended questions was analyzed qualitatively. SP rated the distress thermometer (DT) in pre and post FC surveys. DT included 11-point numerical rating scale. Consecutive cancer patients were enrolled.

Results: We screened 99 FC. 72 were analyzed; (56%) female; mean age 66 yrs; (29%) African American; (40%) had delirium. Spokesperson: spouse (49%), child (30%), other (21%). FC location: bedside (60%). Attendees Mean 4±3: children (65%), spouses (55%), siblings (38%), parents (13%), others (32%).
FC duration: mean 50±16 min. Most frequent FC reason: transition to hospice 80%. Number of issues discussed: 15±3. SP needs not met: Living Will (38%), resuscitation (42%), DPOA for health care role (46%), adverse effect of drugs (36%). DT score average decrease was 1.1±2.7; adult children had greatest DT reduction. Self report of increased distress: other family members included to understand prognosis, post acute care planning, difficulty recalling what discussed. FC reported valuable: SP (97%).
Conclusions: Participation suggests FC is important; 50 min. duration needed for informational needs. Our data indicates adult children as SP leave the FC with less distress; family conference rated as valuable.

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VENOUS THROMBOEMBOLISM PROPHYLAXIS PATTERNS IN A LARGE ONCOLOGY CENTER

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Objective: Patients with cancer are at a high risk for experiencing venous thromboembolism (VTE); complications related to VTE are the second leading cause of death. Primary prophylaxis is recommended to reduce the risk of VTE. This study assessed VTE prophylactic treatment patterns in a large oncology clinic.
Methods: A retrospective chart review of randomly selected patients admitted to a large cancer center in the Southeastern US between 10/1/2009 and 11/30/2009 was conducted, to analyze VTE treatment patterns within 90 days of admission. Patients were excluded if they were 18 or younger, had received blood/marrow transplants, or hospitalized for less than 48 hours.
Results: 99 patients were included in the study; 50.5% were female, the average age was 62.4 years (range=21–87) and 56.6% had major surgery. All patients included in the study were at high or highest risk for experiencing VTE (mean risk factor score = 6.3; range = 3–12). 87 patients (87.9%) were prescribed prophylaxis lasting for an average of 7 days (range = 2–28 days); 7% were discharged home on prophylaxis. 52.3% of patients received combination VTE therapy. Two patients (2.0%) developed VTE; both received prophylactic treatment, were in the highest risk category, and were not discharged home on prophylaxis.
Conclusion: Despite being high risk, only 88% of patients were prescribed prophylactic treatment to prevent VTE. These results indicate the need for implementing a hospital-wide prophylaxis protocol for cancer patients at risk for VTE which may lead to higher quality of care and improved patient outcomes.

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PREVALENCE OF DEPRESSED MOOD AND ANXIETY IN ADVANCED CANCER

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Objectives: We aimed to investigate the prevalence/severity of depressed mood/anxiety, their predictors, and the influence of pain/sedation on psychiatric morbidity.
Methods: We surveyed 100 consecutive hospice patients with advanced cancer. Questions included mood, pain, knowledge of diagnosis/prognosis supplemented by visual analogue scales (VAS). VAS scores for mood (VASM), anxiety (VASA), pain (VASP), sedation (VASS) ranged from 0 (best) to 100 (worst). All answered a single question (Are you depressed?), 75 completed VASM, 74 VASA, 75 VASP, 75 VASS. 50 given BDI-1 (Beck Depression Inventory), 25 completed. VAS scores were split into 3 categories: 0–39, 40–69, 70–100 (none/mild, moderate, severe).
Results: 52% female; 15% nerves 13% depression history; 5% anxiety; 74% on opioids; 6% antidepressants, 5% anxiolytics, on admission. Commonest primary cancers: gastrointestinal (32%), respiratory (28%), genitourinary (16%). 58% knew diagnosis; 37% prognosis. 46% pain at interview. 23% depressed on single question. Median age 69 (59, 77). VAS scores: mood 48 (29, 62); anxiety 27 (11, 52); pain 26 (2, 51); sedation 40 (18, 65). Median score for BDI-1 was 11 (7, 15). Patient numbers on VAS

scores (mild, moderate, severe): 32, 28, 15 (mood); 45, 23, 6 (anxiety); 47, 22, 6 (pain); 37, 23, 15 (sedation). BDI-1 revealed 3 not depressed, 4 mild, 14 moderate, 4 severely depressed. Completion rate 75% for all VAS; 25% for BDI-1. Predictors of depressed mood/anxiety showed only history of nerves, depression, anxiety associated with VASM.

Conclusions: Prevalence of moderate/severe depressed mood 60%; anxiety 40% by VAS in hospice patients with advanced cancer.

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UNMET NEEDS, PSYCHOLOGICAL DISTRESS AND QUALITY OF LIFE IN MEN COMMENCING RADIOTHERAPY FOR PROSTATE CANCER

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Objectives: Commencing radiotherapy (RT) for prostate cancer (PC) is a difficult time when information and support needs are often unreported by men and undetected by health professionals. This project examined unmet needs, distress and quality of life in Australian men commencing potentially curative RT for PC.

Methods: A large, consecutive sample of 332 men (response rate 72%) completed standardised measures when commencing radiotherapy including: Supportive Care Needs Survey (SCNS), Hospital Anxiety and Depression Scale (HADS), Distress Thermometer (DT) and Expanded Prostate Cancer Index Composite (EPIC).

Results: Probable clinical anxiety was reported using HADS by 21% of participants and 7% reported probable depression. Clinically significant distress on the DT was reported by 20% of participants. Ninety-three percent reported at least one unmet need on SCNS (mean=13 from 34 needs). Sexual functioning was reported to be a considerable problem on the EPIC by 36% of men. Those who had undergone previous prostatectomy or androgen deprivation had significantly lower sexual quality of life ($p<0.0005$), higher levels of unmet sexual needs ($p<0.001$) and higher physical daily living needs ($p<0.0005$). Men who had undergone androgen deprivation or had higher risk disease reported significantly higher levels of depression ($p<0.0005$).

Conclusions: Many men with prostate cancer experience high levels of unmet needs, psychological morbidity and poor sexual functioning when commencing radiotherapy, despite a good prognosis. Subgroups of men at high risk of poor psychosocial outcomes, notably those who have had previous treatments, may benefit from targeted, early intervention and increased support.

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PALLIATIVE CARE PHYSICIAN ATTITUDES AND BELIEFS REGARDING COMMUNICATION WITH TERMINALLY ILL CANCER PATIENTS: CHANGES IN LATIN AMERICA OVER ONE DECADE

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Objectives: To compare palliative care physicians' attitudes and beliefs regarding communication with terminally ill cancer patients to those identified one decade earlier.

Methods: Two hundred palliative care physicians from 16 Latin American nations were surveyed in 2010. Results were compared to findings from a similar, smaller survey conducted in 2000. Chi-square tests and correlations were conducted to compare responses across both time-points.

Results: Two hundred of 376 physicians completed the 2010 survey. Most physicians (>92%) in 2010 and 2000 believed patients should be informed of their diagnosis. However, the proportion of physicians reporting that at least 60% of their patients knew their diagnosis increased significantly (52% to 75%, P=0.014). Physician support for patient knowledge regarding terminal diagnosis rose over this period (P=0.029), as did the proportion of physicians reporting that at least 60% of their patients knew their terminal status (24% to 52%, P=0.009). Approximately twofold increases were detected in the proportion of physicians indicating that at least 60% of patients (P=.022) and families (P=.018) wanted to know

the terminal status. Finally, physicians in 2010 were more likely to support autonomy and beneficence over justice, in contrast to their previous support of beneficence and justice over autonomy.
Conclusion: These findings suggest that there has been a significant shift towards enhanced disclosure in communication preferences and practices regarding cancer diagnosis and prognosis in Latin America over the past 10 years. These changes in patterns of inclusiveness and disclosure may reflect the growth of palliative care education in the region.

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ADVERSE EFFECTS AND PARENTERAL HYDROMORPHONE USE IN RENAL FAILURE

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Background: Hydromorphone is a semi-synthetic derivative of morphine that is metabolized to hydromorphone-3-glucoronide (H3G), a compound that has no analgesic properties but one that may contribute to the development of neurotoxicity. In renal insufficiency, H3G accumulates and has been shown to cause myoclonus, agitation, and seizures in a dose dependent manner when infused into the cerebrospinal fluid of rats. In humans, there is conflicting evidence as to whether hydromorphone causes neuroexcitatory toxicities when given to patients with renal insufficiency.

Aim: Determine the prevalence of neuroexcitation in patients with renal failure given hydromorphone.
Methods: For the twelve-month period from June 2007 through June 2008, charts of inpatient hospice patients with a glomerular filtration rate of <60 (ml/min/1.73 m^2) and who had received hydromorphone for pain control via continuous infusion were reviewed for the occurrence of neuroexcitatory effects including tremor, myoclonus, agitation, cognitive dysfunction and seizures. The effect of dose and duration of therapy was evaluated.
Results: There was a strong and graded increase in neuroexcitatory effects with increasing quartile of dose or duration of hydromorphone for agitation (dose, $p<0.0001$; duration, $p<0.0001$) and cognitive dysfunction (dose, $p<0.0002$; duration, $p<0.002$). Consistent but weaker trends were observed for tremor and myoclonus.
Conclusion: Parenteral hydromorphone has few neuroexcitatory symptoms until H3G accumulates past a neurotoxic threshold, such as might occur with increasing dose or duration of therapy, which when exceeded causes neuroexcitatory symptoms to manifest.

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TREATMENT OF CANCER- AND CHEMOTHERAPY-ASSOCIATED ANAEMIA WITH FERRIC CARBOXYMALTOSE IN CLINICAL PRACTICE

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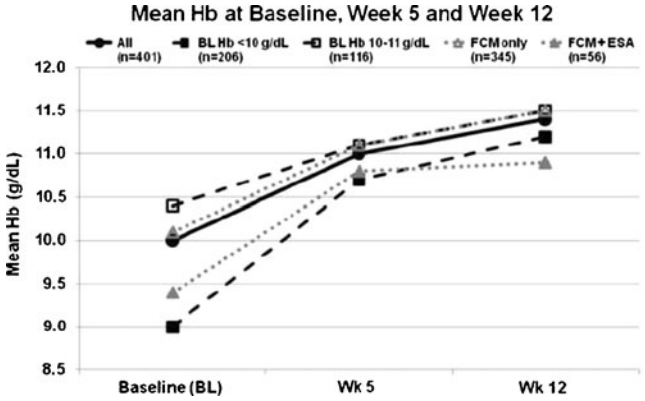
Objective: Intravenous iron improved haemoglobin (Hb) levels and decreased needs for erythropoiesis-stimulating agents (ESAs) and blood transfusions in trials with anaemic cancer patients. This observational study monitored ferric carboxymaltose (FCM) effectiveness and tolerability in routine treatment.
Methods: 73 office-based haematology/oncology centres registered 642 adult cancer patients with iron deficiency anaemia (Germany, Dec 2008–Jul 2010). This interim analysis evaluated, Hb levels of 401 FCM-treated patients completing the 12-week study and safety data of 581 patients receiving at least one FCM dose.
Results: Patients (49% male; mean 64 years) received a mean total of 1333 mg iron; 15.7% also received ESAs and 25.6% a transfusion. Mean Hb across all patients increased to 11–12 g/dL by Week 5 and remained stable until Week 12. After five weeks, patients with mild and moderate-to-severe anaemia at diagnosis and patients receiving concomitant ESAs achieved comparable Hb levels. FCM treatment was well tolerated. Fourteen patients (2.4%) had possibly or probably drug-related adverse events (AEs), mainly nausea and diarrhoea. Two fatalities occurred: one unrelated and one after a possibly related respiratory insufficiency. Two serious AEs (tachycardia, dyspnoea) were unlikely FCM-related.

Conclusions: FCM effectively improved Hb independent of baseline levels and concomitant erythropoietic therapy and showed good tolerability.



[Figure 1]

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EFFECT OF AN IODINE DIET ON POSTSURGICAL PREPARATION FOR RADIOIODINE ABLATION THERAPY IN PATIENTS WITH DIFFERENTIATED THYROID CARCINOMA

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Objective: The radioiodine ablation therapy with iodine-131 is done for patients who underwent total thyroidectomy. For effective radioiodine ablation therapy, restricted iodine diet for a certain period of time is recommended. Through a comparative review of low iodine diet (LID) and restricted iodine diet (RID), the study aims to suggest a standardized protocol and guidelines that are suitable for the conditions of Korea.

Methods: The study was conducted with 101 patients. With 24-hour urine samples from the patients accumulated after a 2-week restricted diet and after a 4-week restricted diet, the amount of iodine in the urine was estimated. The consumed radioiodine amounts for 2 hours and 24 hours were calculated.

Results: This study was conducted with 47 patients for a LID and 54 patients for RID. The analysis of the clinical characteristics between the two groups did not show statistical differences. For the amounts of iodine in urine, the 2-week case and 4-week case for each group showed no significant differences. The amounts of iodine in urine between the two groups were both included in the range of <50 ug/gCr, the criteria for radioiodine ablation therapy. Also, 2 hours and 24 hours radioiodine consumption checked after 4-week restrictive diet did not show statistical differences between two groups.

Conclusion: A 2-week RID can be considered as a type of radioiodine ablation therapy after patients undergo a total thyroidectomy if they receive proper education. Furthermore, through RID, it is anticipated that patients can enjoy a better quality of life.

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HOPE, OPTIMISM AND SURVIVAL IN PATIENTS DIAGNOSED WITH METASTATIC COLORECTAL CANCER (AN AUSTRALASIAN GASTROINTESTINAL TRIALS GROUP STUDY)

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Objective: Psychological responses to cancer are widely believed to affect survival. We investigated associations between hope, optimism, anxiety, depression, utility and survival in patients starting first line chemotherapy for metastatic colorectal cancer.

Methods: 421 subjects with metastatic colorectal cancer in a trial comparing two different chemotherapy regimes, completed baseline questionnaires assessing: hope (State Hope Scale), optimism (Life Orientation Test), anxiety and depression (Hospital Anxiety and Depression Scale) and utility (Euroqol-5D). Hazard ratios (HR) and p-values were calculated with Cox's models for overall survival (OS) and progression free survival (PFS) in univariable analyses

(UVA), and in multivariable analyses (MVA) accounting for other prognostic factors.

Results: Longer OS was associated with: a depression score <8 in UVA (medians 20 v 11 months, HR 0.49, p<0.0001) and MVA (HR 0.58, p 0.001); a utility >0.8 in UVA (23 vs 15 months, HR 0.56, p<0.0001) and MVA (HR 0.73, p 0.01); and a hope score ≥6 in UVA (20 v 15 months, HR 0.75, p 0.01), but not MVA. OS was not associated with optimism in UVA or MVA. Longer PFS was associated with a utility ≥0.8 (8 v 7 months, HR 0.76, p 0.007) in UVA, but not MVA. PFS was not associated with hope, optimism, anxiety or depression in any analyses.

Conclusion: After controlling for known prognostic factors, depression and utility, which are potentially modifiable, were significant independent predictors of OS, whereas hope, optimism or anxiety were not. PFS was not associated with any psychological factors.

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SUPPORTIVE CARE NEEDS SURVEY FOR AUSTRALIAN INDIGENOUS CANCER PATIENTS

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Objective: The objective of this study was to assess the face and content validity of an existing SCN tool (SCNS-SF34) for use with Indigenous Australians and to develop a culturally appropriate subscale.

Methods: Face-to-face interviews (n=30) with Indigenous cancer patients and focus groups (n=5) with Indigenous key-informants were conducted to assess the appropriateness, cultural acceptability, utility and relevance of the SCNS-SF34 tool for use with Indigenous cancer patients.

Results: Patients were recruited from two hospitals in Queensland, Australia. They were mainly women (63%), a mean age of 53 years, married (59%), high school education (49%), resided in accessible areas (59%), and diagnosed with gynaecological (30%) and lung (23%) cancers. Key informants were mostly women (62%), a mean age of 44 years, resided in accessible areas (44%), high school education (75%) and employed as health workers (42%).Participants agreed the SCNS-SF34 required substantial changes. All items were shortened/changed to use Indigenous friendly language (e.g. the word 'anxiety' was substituted with 'worry'). Seven questions were omitted (e.g. item on death) as they were culturally inappropriate and 12 items added (e.g. having transport). The sexual items were considered culturally inappropriate and were therefore made optional.

Conclusions: This study found that Indigenous cancer patients have language differences and specific needs that are not accommodated within the standard SCN-SF34 tool. Our modified Indigenous-specific survey addresses acceptability and cultural issues and is recommended as the preferred tool for use in the Australian Indigenous population.

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SEXUAL FUNCTION AND VAGINAL CHANGES OF THE GYNECOLOGICAL CANCER SURVIVORS IN HONG KONG

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Objectives: Intimacy and sexual functioning may be influenced by the diagnosis and treatment of gynecological cancer. However, care on this area has not been given enough attention by health professionals in Hong Kong. This study aims to assess the impact of gynecological cancer and relevant treatments on sexual functioning among gynecological cancer survivors in Hong Kong.

Methods: Women who had gynecological cancer and undergone surgery, chemotherapy or radiotherapy in Hong Kong were recruited. The Chinese version of Sexual function-Vaginal changes Questionnaire (SVQ) was used to assess sexual morbidities after diagnosis and treatment for gynecological cancer.

Results: A convenience sample of 150 Hong Kong Chinese women was recruited. Most of them (79%) had no or low sexual interest and 56% of them had experienced decreased sexual interest since the diagnosis of cancer. Nearly half of the subjects (47%) also reported that their partners had lost sexual interest since the diagnosis. Among those who had sex in the last month, 64%, 60% and 38% of them reported dyspareunia, decreased vaginal lubrication and no orgasm during intercourse respectively.

Conclusions: Many Hong Kong Chinese gynecological cancer survivors experienced sexual dysfunction and vaginal problems after the diagnosis and cancer treatment. While embarrassment may be a potential barrier in communicating these needs and problems in the Chinese culture, health professionals should take a proactive approach in assessment and provide timely counseling and interventions to address physiological and/or psychological impacts brought by the cancer or the treatments with an ultimate goal to improve their quality of life.

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THE CUTOFF SCORES OF COPING BEHAVIOR INVENTORY-BRIEF (CBI-B) FOR LUNG CANCER PATIENTS UNDER THE RISK OF DEPRESSION

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Objectives: The aim of this study was to determine optimal cutoff scores of Coping Behavior Inventory-Brief (CBI-B) in lung cancer patients to predict depression problem.
Method: In the cross-sectional study, a total of 150 lung cancer patients at one month after receiving treatment recruited from a medical center in Northern Taiwan. Patients were assessed by (1) CBI-B, (2) Hospital Anxiety and Depression Scale-Depression Subscale (HADS-D), and (3) Background Information Form. Receiver operating characteristic (ROC) curves were determined the sensitivity and specificity of the CBI-B as differentiating depressive status.
Results: The results showed that
(1) Patients had higher scores in "self-efficacy in seeking and understanding medical information" (Mean=7.7, SD=1.9); whereas, "self-efficacy in seeking social support" had relatively lower scores (Mean=5.7, SD=3.1).
(2) Around 37.3% patients were the borderline or clinical depression cases (HADS-D>8).
(3) The areas under the curve (AUC) was 0.79 and the optimal cutoff point was 6.9 (Sensitivity = 0.72, 1-Specificity = 0.28) indicating a moderate to high levels of diagnostic tool to differentiate the borderline depression cases or non-depressive cases. Furthermore, the ROC curves for affective regulation (AUC=0.78, p<.0001) and positive attitude (AUC=0.76, p<.0001) subscales of the CBI-B showed greater sensitivity and specificity than other subscales for differentiating the depression groups.
Conclusion: The CBI-B is a good scale with sensitivity and specificity in detecting the level of depression, particularly in the domains of affective regulation and positive attitude.

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IMPACT OF NAUSEA AND VOMITING ON QUALITY OF LIFE IN PRIMARY BREAST CANCER PATIENTS UNDERGOING CHEMOTHERAPY

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Objectives: Chemotherapy-induced nausea and vomiting (CINV) remains one of the most distressing symptoms. It has increasingly become important to examine the impact of CINV on multidimensional quality of life (QOL), because it might affect patient's willingness to continue treatment. The objective of this study is to examine the effect of CINV on QOL in patients receiving chemotherapy.
Methods: This prospective observational study was conducted on 65 primary breast cancer patients undergoing FEC with granisetron and dexamethasone[MS1] at one medical facility in Tokyo. Patients completed self-report 6-day daily diary including episodes of vomiting, nausea rating, and the percentage of oral intake after the initiation of chemotherapy. Patients also completed the QOL-ACD questionnaire before and 7 days after the therapy.
Results: 63 patients were assessable. Average total episodes of vomiting over 6 days were 1.5. Average score of '100 minus nausea' and the percentage of average oral intake per day compared with normal day were 78.8 and 61.7%, respectively. We found significant positive correlations between change in QOL (functional/physical) (post-chemotherapy score minus baseline score) and '100 minus nausea', and oral intake. There was a significant positive relationship between change in global QOL and '100 minus nausea'. There were also significant positive relationships between changes in 2 of QOL subscales (functional/physical and mental) and global QOL. Significant reductions were seen in functional/physical and mental QOL domains from baseline to post-chemotherapy.
Conclusions: This study shows CINV adversely affected QOL. Chemotherapy itself also had negative effect on QOL and it led to decreased global QOL.

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PILOT STUDY OF BIOMARKERS OF CHEMOTHERAPY-INDUCED GASTROINTESTINAL TOXICITY

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Introduction: Chemotherapy regimens containing 5-fluorouracil, capecitabine or irinotecan are commonly associated with severe gastrointestinal toxicity. A predominant adverse event of these agents is complicated diarrhoea. There are currently no satisfactory ways to predict patients most at risk of developing diarrhoea during treatment, or adequate early markers to signal impending problems. As such, this pilot study investigated potential biomarkers of therapy-induced diarrhoea.
Methods: Patients scheduled to receive anti-cancer regimens containing 5-fluorouracil, capecitabine or irinotecan were recruited from a single institution. Patient blood and stool samples were collected before starting, and on day 2, 5, and 10 of one chemotherapy cycle. Serum MMP-2,-3 and-9, and pro-inflammatory cytokines, TNF-alpha, Il-1B and NFkB were assayed by ELISA. Fecal Bifidobacterium and Ecoli microflora gene expression was also investigated. Time course data was grouped to assess overall changes in biomarkers levels. Patient data was also paired, where possible, to observe inter-individual variability. All data presented as mean±SEM.
Results: MMP3 increased 5.74-fold from baseline on day 2 (0.303±0.98 vs 1.740±0.71 ng/ml). NFkB levels showed a peak increase of 4.51-fold from baseline on day 2 (0.190±0.16 vs 0.856±0.63) and TNFa rose 6.38-fold on day 10 (0.929±0.89 vs 5.932±4.90 pg/ml). Potentially pathogenic microflora, Ecoli, was increased 5.16-fold from baseline on day 10 (0.028±0.008 vs 0.146±0.07).
Conclusions: Our preliminary findings suggest that MMP3, NFkB, TNFa and Ecoli are potential biomarkers of gastrointestinal toxicity induced by specific chemotherapy agents. Further analysis is required to determine if biomarker levels correlate with patient symptoms.

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MONTHLY BISPHOSPHONATE THERAPY IN PATIENTS WITH BONE METASTASES: A VALUABLE OPPORTUNITY FOR IMPROVING PATIENT CARE

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Objectives: Patients with bone metastases are at risk for skeletal-related events (SREs) that can undermine quality of life (QOL) and functional independence. Proactive follow-up and management of SREs are crucial to protect against rapid deteriorations in QOL. However, follow-up opportunities with trained oncology professionals may be limited in socialised medicine settings.
Methods: In the King's College Hospital in London, UK, infusion clinic visits have been leveraged as a resource to facilitate follow-up and proactive management of patients with bone metastases.
Results: A monthly infusion of zoledronic acid (ZOL; 4 mg [adjusted based on creatinine clearance] via 15-minute infusion) has been shown to significantly reduce the risk of SREs. This monthly infusion visit provides an opportunity for regular assessment of skeletal health, adherence to oral medications and supplements, and adverse event management by trained oncology professionals. These interactions provide a continuity of care and an opportunity to provide ongoing education to patients about effective skeletal health and adverse event management strategies. The multidisciplinary medical team structure developed at King's College allows oncology nurses to proactively identify early deteriorations in patients' medical conditions. Moreover, the interactions fostered during the monthly visits are effective in overcoming barriers to the rapid enactment of supportive care strategies to minimize the effects of pain and disease symptoms on QOL.
Conclusions: In a socialised medicine setting, the monthly infusion visit for ZOL provides a valuable opportunity for interaction between oncology professionals and patients with advanced cancer, allowing for the proactive enactment of supportive care strategies.

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INSIGHTS INTO THE USE OF ZOLEDRONIC ACID FOR PALLIATION OF BONE PAIN IN PATIENTS WITH BONE METASTASES FROM SOLID TUMOURS

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Objectives: Patients with bone metastases from solid tumours are at risk for debilitating and potentially life-limiting skeletal-related events (SREs). Zoledronic acid (ZOL; 4 mg every 3–4 weeks) has demonstrated efficacy and received broad regulatory approval for reducing the risk of SREs in such patients. Since its first approval, real-world experience with ZOL treatment has provided further understanding of its utility (± palliative radiotherapy) in the bone metastases setting.

Methods: Recently published reports of ZOL for pain palliation and treatment of bone lesions in patients with bone metastases were reviewed in the context of observations from our clinical practice at the Kings' College Hospital in London, UK.
Results: Available data support the use of ZOL in conjunction with radiotherapy to palliate bone pain and potentially delay the progression of bone lesions in patients with advanced cancers. Reported benefits include reduced rates of pain progression (Katamura Y, et al. 2010), reductions in the levels of palliative radiotherapy (Atahan L, et al. 2010) and analgesic usage (Galvez R, et al. 2008), and potential delays in progression of existing bone lesions (Katamura Y, et al. 2010) and/or development of new lesions (Cheng J, et al. 2008). These reports support our clinical observations in >55 patients over 5 years in a non-trial setting.
Conclusions: The timely initiation of ZOL is a useful adjunct to palliative radiotherapy in patients with bone metastases and may provide additional benefits for delaying bone lesion progression.

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SKELETAL-RELATED EVENT (SRE) HEALTH RESOURCE UTILISATION (HRU) IN PATIENTS WITH BONE METASTASES: RESULTS FROM A PROSPECTIVE MULTINATIONAL OBSERVATIONAL STUDY

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Objectives: SREs are common in advanced cancer patients with BMs and are assumed to be associated with considerable clinical and healthcare impact. However, limited data on this burden are available; this knowledge is crucial to estimate its impact and the value of preventative measures.
Methods: In this European analysis, patients with BMs; at least one SRE; life expectancy >6 months and ECOG≤2, were enrolled at centres in Germany, Italy, Spain and UK. Investigator-attributed HRU associated with SREs (spinal cord compression, surgery to bone, pathologic fracture or radiation to bone) was collected; retrospectively for 90 days prior to enrollment and prospectively for up to 18–21 months.
Results: Across 95 European sites, 631 eligible patients were enrolled with breast (223; 35.3%), lung (135; 21.4%) or prostate cancer (120; 19%) or multiple myeloma (153; 24.3%). In a European pooled HRU analysis, 366 of 1,174 (31.2%) SREs were associated with an in-patient stay, with a mean duration of 18.0 (SD=16.7) days per in-patient stay (n=399). Length of stay per in-patient stay varied by facility (i.e. oncology, radiation, rehabilitation, surgical), SRE and tumour type. The most common SRE requiring hospitalisation was surgery to bone 103 of 137 (75.2%). Of 1,174 SREs, 841 (71.6%) required an outpatient visit and 33.4% required >5 visits.
Conclusions: This study examined the relationship between SREs and HRU. SREs associated with BMs secondary to advanced cancer can lead to lengthy hospitalisations and numerous outpatient visits. Preventing SREs may substantially reduce costly HRU in different European healthcare systems.

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SCREENING FOR DISTRESS AND SUPPORTIVE CARE NEEDS DURING THE INITIAL PHASE OF THE CARE PROCESS: QUALITATIVE EXPERIMENT IN FRANCE

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Purpose: To provide a qualitative description of a clinical pilot experiment in a French cancer center, conducted by a nurse after the treatment decision consultation attended by new cancer patients during the initial phase of the care process.
Methods: The Psychological Distress Thermometer (PDS) and a problem checklist were administered to 255 patients before nurse consultation, helping her to manage the clinical interview, explore patient's distress and supportive care needs, and finally refer the patients in need to the required Supportive Care units.
Results: Patients were primarily referred to the social service unit (35% patients), followed by the physiotherapy unit (23.9%) and the psycho-oncology unit (19.6% of patients). In cases of significant distress (43% patients with

PDS > 3), the percentage of patients referred to the psychosocial units increased (44% referred to the Social Unit, 35% to the Psycho-Oncology Unit). However, the main interest of our screening procedure resides in its qualitative and didactic dimension, based on clinical training and cooperation with health care professionals during the process of investigating patients' distress and their supportive care needs. Difficulties and limitations are also described.

Conclusions: This first clinical experiment conducted among dedicated nurses involved in a Therapeutic Decision Consultation in a French cancer center has provided evidence in support of the idea that non-specialist professionals are able to identify patients' distress and their Supportive Care needs (particularly in the psychosocial field) provided that they have received appropriate training.

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PATIENT'S AGE DOES NOT IMPACT ON INCIDENCE OR TIME COURSE OF ORAL MUCOSITIS DURING RADIO(CHEMO)THERAPY FOR HEAD-AND-NECK TUMOURS

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Objective: To analyse the influence of age on the manifestation of oral mucositis during radio(chemo)therapy.

Methods: Analysed were 334 consecutive patients with tumours of the head-and-neck, treated with conventional radiotherapy without (group I: n=252) or with chemotherapy (group II, n=82), receiving at least 40 Gy in the oral cavity. The median age was 63 (I)/55 years (II). All patients received daily professional mouth washes, with scoring of the mucosal reactions. Confluent mucositis (grade 3) was stringently defined as any lesion with a diameter >1 cm.

Results: In patients aged below median, incidences of mucositis grade 2 were 95% (both groups), of grade 3 72% (I)/75% (II). In older patients, grade 2 was found in 93/95%, and grade 3 in 63/70% of the patients. Latent time to first diagnosis of grade 2 without chemotherapy was 19±7 days (both groups), with chemotherapy 21±6 days in younger and 18±7 days in older patients. For grade 3, latencies in younger patients were 29±7 days (I) and 26±7 days (II), in older patients 27±7/27±9 days. Differences were not statistically significant. When patients were classified in age groups of 10 years each, neither the incidence of grade 2/3 reactions nor the latent time displayed any systematical age dependence.

Conclusions: The early response of oral mucosa to radio (chemo)therapy of head-and-neck tumours does not display any age dependence over an age range of 20–93 years. Therefore, supportive care must be performed independent of age.

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ORAL MUCOSITIS IN PAEDIATRIC PATIENTS UNDERGOING CHEMOTHERAPY: IMPACT ON ORAL FUNCTIONAL STATUS AND QUALITY OF LIFE

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This study determined the paediatric patients' self-reported oral mucositis (OM) and its-related oral activity limitations, and to compare quality of life (QoL) and clinical outcomes among paediatric patients with different severity of OM.

140 patients (mean age 11.8±3.3 years) treated with chemotherapy completed the OMDQ MTS daily from days 1 to 14, and the OM-specific QoL measure (OMQoL) at baseline, days 7 and 14.

Overall, 41% (n=57) of patients developed OM; of these, 23% (n=32) of them reported a maximum MTS score of 2 (non-severe OM), and 18% (n=25) reported a maximum MTS score of 3–4 (severe OM). The incidence of non-severe and severe limitations in swallowing, drinking, eating, and speaking resulting from OM ranged from 18% (n=25) to 35% (n=49). Approximately 39% (22 out of 57) of patients with OM reported at least two simultaneous non-severe or severe activity limitations. All OMQoL subscale scores of patients with severe OM were significantly lower than those with non-severe OM or without OM at all the time points ($p<0.001$). Weight loss ≧2 kg was common among patients with severe OM (30%, n=7). In addition, for patients with severe OM, fluid replacement, analgesic use, and oral or intravenous antibiotics were more common ($p<0.001$).

Paediatric patients with OM often suffer a multitude of debilitating impairments of oral function. The consequences that OM exert havenegative effects on clinical outcomes, as well as many aspects of paediatric patients' QoL.

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PSYCHOLOGICAL PROFILE OF PATIENTS WITH NEGLECTED MALIGNANT WOUNDS: A QUALITATIVE EXPLORATORY STUDY

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Neglected malignant ulcerating tumours often result from failure to seek medical attention, even when the advancing tumour is visible to the patient and their friends and families. Although the appropriate wound treatment procedures are the same as for non-neglected malignant wounds, clinicians must take such neglect into account when planning the patient's care. Over a two-year period, 25 patients at the National Cancer Centre Wound Care Unit in Paris were identified as presenting with a neglected tumour; 18 of these agreed to participate in a structured interview with a psycho-oncologist for an evaluation of their neglect behaviour. Initial results demonstrate a frequent, but not systematic, presence of a wide range of psychopathological disorders.

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TREATMENT OF PATIENTS WITH METASTATIC SPINAL TUMOR BY PERCUTANEOUS VERTEBROPLASTY AND CHEMOTHERAPY

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Objective: To explore the clinical effect in patients with metastatic spinal tumors treated by percutaneous vertebroplasty (PVP) and chemotherapy.
Methods: A total of 110 cases with a metastatic spinal tumor were divided into 55 cases in the treatment group (group A) and 55 cases in the control group (group B). The general clinical data were statistically analyzed before treatment with the parameters showing no differences. Group A was treated by PVP and chemotherapy as well. The group B was treated by the regular chemotherapy. All cases were provided with a follow-up survey for 12 months. During the follow-up survey, changes in the quality of life, in evaluation of and in vertebral column stability as well as adverse reaction were observed.
Results: The statistics showed a significant difference between the 2 groups, specifically changes in the quality of life and evaluation of bone pain ($P<0.05, t_1=2.74, t_2=9.02$). During the follow-up survey, 5 cases in group A died of other organ complilcations, the death rate being 9.1%. The vertebral columns of the survivors were kept stable. Thirteen cases died in group B with a death rate of 23.6%. Pathological compression fractures in the vertebral bodies occurred in 30 cases, and 12 cases of complicated paraplegia were noted. The incident rate of paraplegia was 21.8%.
Conclusion: PVP is a simple operation causing only small wounds and few complications. It can effectively alleviate pain of metastatic spinal tumors in patients, improve quality of life and reduce the incidence rate of paraplegia.

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ATTITUDES OF CANCER PATIENTS, FAMILY CAREGIVERS, ONCOLOGISTS, AND THE GENERAL POPULATION TOWARD HOSPICE PALLIATIVE CARE

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Background: Although hospice palliative care can alleviate suffering and improve quality of life for patients at end-of-life (EOL), there are many barriers to establishment of hospice palliative care in Korea.
Methods: We administered questionnaires to attitudes of cancer patients, family caregivers, oncologists and the general population toward hospice palliative care.
Results: A total of 3,840 individuals-1,242 cancer patients, 1,289 family caregivers, and 303 oncologists from 17 hospitals, as well as 1,006 members of the general Korean population-participated in the survey.It showed that the general population (19.2%), family caregivers (11.2%), and cancer patients (12.9%) were more likely to think it is not right to provide hospice palliative care to patients at EOL as their family, compared with the oncologists (0.7%). The general population (14.9%),

family caregivers (13.2%), and cancer patients (15.8%) were more likely to think that hospice palliative care service could hasten terminal cancer patient's death than oncologists (5.7%). Furthermore, they showed lower intention to use hospice palliative care. However, toward obligation to introduce hospice palliative care to patients at the EOL, the general population (89.8%), family caregivers (88.4%), and cancer patient (88.5%) had more positive attitudes than oncologists (67.3%).

Conclusions: Our findings suggest that public education about hospice palliative care is needed to overcome negative attitudes toward hospice palliative care for the general population, cancer patients and their caregivers in Korea.

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CLINICAL INVESTIGATIONS ON THE SPINAL OSTEOBLASTIC METASTASIS TREATED BY COMBINATION OF PERCUTANEOUS VERTEBROPLASTY (PVP) AND ^{125}I PARTICLE IMPLANTATION

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The purpose of this study was to investigate the clinical efficacy of combining digital subtraction angiongraphy (DSA)-guided percutaneous vertebroplasty (PVP) and ^{125}I particle implantation for the treatment of spinal osteoblastic metastasis. Combination of PVP and ^{125}I was conducted for 42 patients with spinal osteoblastic metastasis. Regular therapies and other comprehensive treatments were performed after surgery. Visual analogue pain scale (VAS) and KPS score were determined for all the patients. Surgery was successful in 89 spinal segments of vertebral body in 42 patients. Each segment of vertebral body was injected with 1–5 ml (2.8 ml for thoracic and 3.1 ml for lumbar vertebral body) of bone cement. Postoperative X-ray and CT examination showed that all patients achieved spinal stability. During the follow-up examination for 6 months to 5 years, 41 patients (97.6%) patients had significantly relieved back pain, and only1 case (2.4%) had no obvious improvement. Postoperative VAS score and KPS scores were significantly different from the preoperative scores ($P<0.05$). The average survival time was 18 months for prostate cancer, 9 months for lung cancer, and 18 months for breast cancer ($P=0.001$). We conclude that PVP is a minimally invasive treatment with easy operation and less complications. PVP can effectively relieve the pain, stabilize the spine, improve the life quality and reduce the occurrence of paraplegia in patients with spinal osteoblastic metastasis. Utilization of ^{125}I particles during PVP can enhance the clinical efficacy.

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CHEMOTHERAPY TOXICITY IN THE ELDERLY PATIENTS (OVER 75 YEARS)

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Introduction: Chemotherapy can be safely and effectively used in selected elderly patients. Factors complicating chemotherapy in the elderly include the physiological changes of ageing, the presence of comorbidities and polypharmacy. The aim of this study is determine the toxicity profile of chemotherapy in elderly patients (over 75 years) with cancers.

Method: This is a single centre study. Retrospective cohort of elderly patients (over 75 years old) receiving chemotherapy for their cancer between Jan 2009 to December 2009 is analyzed for chemotherapy toxicity. The toxicity is graded using CTCAE criteria and divided into hematological and non-hematological.

Result: A total of 133 patients are evaluated for toxicity. Median age of all patients is 78 (range 75 to 91). Colorectal cancer is the most common cancer (30.8%), non small cell lung cancer is next most common (15.8%). More than half of patients (54.1%) have Stage IV disease. Two third of the patients have comorbidity conditions before chemotherapy and 44.4%of them were on polypharmacy. More than 90% of patients have ECOG status less than 3. Two-third of patients experienced grade 3 and 4 toxicities. Grade IV toxicities include neutropenia (4.5%), hepatic dysfunction (3.0%), metabolic disorders (2.3%). Grade III toxicities include anemia (21.5%), metabolic disorders (19.5%), neutopenia (15.8%), gastrointestinal side effects (15.8%), thrombocytopenia (7.5%).

Conclusion: Chemotherapy toxicity in elderly patients (over 75 years) with different types of cancer is not uncommon. Closer monitoring and determining patient and/or regimen specific factors that predict the risk for toxicity is crucial.

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COMMON DRUG- RELATED PROBLEMS (DRP) AMONG GERIATRIC ONCOLOGY PATIENTS - EXPERIENCE FROM THE MEDICATION THERAPY MANAGEMENT (MTM) SERVICE

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Aims: To identify the most common Drug- Related Problems among elderly cancer patients (aged ³65) receiving systemic chemotherapy.
Methods: The Oncology Pharmacy provided MTM service to elderly cancer patients who were taking 2 or more types chronic medications. Detailed medication and medical histories, relevant lab results and vital signs were taken from either electronic data, case notes or interview with patients/caregivers. The MTM pharmacists also reviewed patient's physical medications to check for adherence/ compliance and patients' understanding of their own medications. Actual and potential DRPs were identified and steps to prevent or resolve DRPs or serious adverse drug reactions (ADR) were taken or communicated to the physicians, if necessary.
Results: From July 2010 to Jan 2011, 95 patients received at least one session of MTM. The mean age of these patients was 71.73 (66–85). The mean number of comorbidities in each patient was 3.3 (range: 1–13). The average number of chronic medications each patient was taking was 6.36 (range: 2–13; median=6). The most common comorbidities among these patients were hypertension (93.7%), hyperlipidaemia (78.8%) and diabetes mellitus (47.4%). The most common DRPs observed include Drug Interactions (93 occurrences), Non- adherence to drug regimens (27.4% of patients) and Adverse Drug Reactions (70 occurrences). The other DRPs identified include Indication without drug (9 occurrences), Overdosing (2 occurrences), Underdosing (2 occurrences) and Drug without indication (1 occurrence).
Conclusion: The MTM service serve as an important platform to identify, prevent and resolve drug related problems among elderly cancer patients.

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THE IMPACT OF UNCERTAINTY, COMMUNICATION, AND COPING ON RELATIONSHIP SATISFACTION AMONG PATIENTS UNDERGOING HEMATOPOETIC STEM CELL TRANSPLANT AND THEIR PARTNERS

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Objectives: While potentially life saving, underlying the physical and psychosocial stressors of hematopoietic stem cell transplantation (HSCT) is much fear and uncertainty regarding the aversive physical side effects of transplant, as well as its long-term efficacy, leading up to a third of patients to experience clinically significant distress. Partners of HSCT patients experience similar levels of psychosocial distress than do patients; however, their psychosocial needs are often neglected by practitioners and researchers alike. This pilot study examined how couples' relationships are influenced by their perception of the uncertainty of transplant, coping strategies and communication styles as they await HSCT.
Methods: Twelve couples undergoing HSCT (55% currently married) completed the Dyadic Adjustment Scale, Mischel Uncertainty in Illness Scale, Communication Patterns Questionnaire, and the Brief COPE. Descriptive and correlational analysis was conducted.
Results: Patients viewed the future of their relationship less favourably if they perceived more inconsistency in their health ($r=.594$, $p<.05$). Partner's relationship satisfaction was positively influenced if they perceived their communication style to be constructive ($r=.715$, $p<.05$). Reliance on religion to cope demonstrated different relationships between patients and their partners. For patients religious coping was associated with less perceived dyadic cohesion ($r=-.657$, $p<.05$) while for partners this was associated with stronger perceived consensus ($r=.817$, $p<.05$).
Conclusion: These findings highlight the importance of addressing the uncertainty of transplant with both patients undergoing HSCT and their partners and the potential benefit of coping skills training, specifically in enhancing communication skills.

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STANDARD RADIOTHERAPY TECHNIQUES VERSUS IMRT FOR HEAD-AND-NECK TUMOURS DIFERENTIALLY IMPACT ON SALIVARY PH

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Purpose: To assess salivary pH during (and after) radiation treatment with standard techniques vs. intensity modulated radiotherapy (IMRT) for head-and-neck tumors.
Methods: The study was performed In 51 consecutive patients. Radiotherapy was administered by standard techniques (n=41, total dose = 66±1 Gy) or IMRT (n=10; 68±1 Gy). All patients received daily professional mouth care. Confluent oral mucosal reactions were stringently defined as lesions >1 cm. The pH in the oral cavity was determined once weekly. During follow up, pH measurements were performed on average after 8 weeks (n=16), 13 weeks (n=10), 21 weeks (n=12), and 35 weeks (n=7).
Results: The baseline oral pH was 6.3±0.1. Irradiation with standard techniques did not cause significant changes. In contrast, with IMRT, a progressive increase in oral pH was observed from week 3 (+0.4±0.2), which progressed

to +0.8±0.3 in week 6 and +1.2±0.3 in week 7. The incidence of confluent mucositis was 80% in the IMRT group vs. 54% for standard techniques. During radiotherapy, elevated pH-levels were correlated with the incidence of grade 3 mucositis, particularly in the later treatment weeks. After radiotherapy, a slight reduction was observed with standard techniques, while values in the IMRT group remained elevated.

Conclusions: The change in dose distribution by IMRT, with a decreased high dose volume, but an increase in the volume receiving moderate doses, impacts on the quality of the saliva, with an increase in pH. The results suggest an impact of elevated pH-levels on the induction of confluent mucositis.

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ABSORPTION OF A FAT BOLUS IS INDICATED TO BE DECREASED DURING METHOTREXATE (MTX)-INDUCED GASTROINTESTINAL MUCOSITIS IN A RAT MODEL

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Objectives: Gastrointestinal mucositis is a severe and debilitating side effect of chemotherapy, often causing weight loss and malnutrition. We developed a MTX-induced mucositis rat model to study nutrient digestion and absorption. Here, we studied plasma appearance of stable isotope labeled (un)saturated fatty acids during mucositis, as an indicator of fat absorption.

Methods: Wistar rats were i.v. injected with MTX (60 mg/kg) or NaCl 0.9%. Four days later, we orally administered an [U-^{13}C]palmitic acid- and [U-^{13}C]linolic acid-enriched, meal size fat bolus (olive oil/MCT oil mixture, 400 ul/rat) and quantified appearance of labeled fatty acids in the plasma for 6 hours (by GC-MS). Absorption capacities were calculated by area under the concentration curves (AUC) of labeled fatty acids during the experimental period (0–6 hour). Finally, we collected the small intestine.

Results: MTX-treated rats suffered from severe mucositis, as shown by profound villus atrophy, epithelial damage, increased mucosal MPO levels (34-fold) and decreased plasma citrulline levels (7-fold), as compared to controls (both $p<0.01$). From 1 hour after bolus administration on, plasma concentrations of [U-^{13}C]palmitic acid and [U-^{13}C]linolic acid were significantly decreased in MTX-treated rats, as compared to controls ($p<0.01$). The AUC of [U-^{13}C]palmitic acid and [U-^{13}C]linolic acid were both 6-fold lower in MTX-treated rats, as compared to controls ($p<0.01$).

Conclusion: We conclude that plasma appearance of orally administered, bolus-fed (un)saturated fatty acids is severely decreased during MTX-induced mucositis, indicating decreased absorption of a fat bolus. Therefore, bolus feeding seems not an adequate method to administer fat to mucositis patients.

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FURTHER CHARACTERISATION OF EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) TYROSINE KINASE INHIBITOR-INDUCED DIARRHOEA

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Objectives: Dose-limiting toxicity is frequently associated with use of tyrosine kinase inhibitors such as lapatinib, with diarrhoea observed in up to 60% of patients. We previously designed a rat model establishing lapatinib-induced diarrhoea, and have investigated the effects of a combination of lapatinib and a conventional chemotherapy agent, paclitaxel, in order to more closely reflect the clinical setting.

Methods: Albino Wistar rats were grouped (n=8) and treated daily with 240 mg/kg oral lapatinib concurrently with weekly 12 mg/kg intraperitoneal paclitaxel; body weight and diarrhoea were monitored daily. Blood biochemistry, histopathology and intestinal morphometry were assessed weekly; differences between group means over time and across treatments were analysed by the Kruskal-Wallis test, with Dunn's post-hoc analysis.

Results: Weight loss was significantly greater in the combination group. Similarly, the incidence of diarrhoea (moderate to severe) increased within the lapatinib/paclitaxel combination group (81.25%, compared to 64.58% [lapatinib], 22.92% [paclitaxel] and 4.17% of controls). Serum ALT levels were significantly higher in the combination group (P=0.0092), however, there were no other significant differences between organ weights or blood biochemistry, apart from a non-statistical trend towards smaller spleens and larger small intestines in combination group.

Conclusions: As previously suggested, lapatinib-induced diarrhoea is likely due to changes in local gut biochemistry.

Combination with paclitaxel exacerbated both severity and incidence of lapatinib-induced diarrhoea via compounding damage to the small intestine. These findings suggest caution should be used in clinical regimens that combine full dose lapatinib with paclitaxel.
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THE RELATIONSHIP BETWEEN CAREGIVING BURDEN AND SOCIAL SUPPORT IN CAREGIVERS OF PATIENT WITH CANCER

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Objectives: The aim of the study was to examine the relationship between caregiving burden and social support in caregivers of patients diagnosed with cancer.
Methods: A total of 205 caregivers completed the Caregiving Burden Scale and the Multidimensional Scale of Perceived Social Support in outpatients and inpatients oncology unit at Ege University Hospital, in West Turkey, Descriptive statistics, parametric tests (independent t-test), nonparametric tests (Kruskal wallis, Mann-Whitney U) and spearman correlation were used for data analysis. $p>0.05$ was accepted as statistical significance.
Results: The half of the caregivers were male (52.7%) with mean age 45.28 years. Most of the participants were married (82.9%), were unemloyed (66.3%) were spouse of patients (36.1%). Most participants (70.7%) reported that they had no health problems of their own. Hundred-six of caregivers had one with whom to share their caregiving responsibilites. There were no significant differences between mean caregiving burden, social support scores. and some socio-demographic characteristics (marital, employ, occupational and to be primary caregiver status) ($p>0.05$). The caregiving burden level of the caregivers was reduced by increasing educational background ($p<0.05$). There was a negative weak significant correlation between the mean careving burden scores and social support scores. ($r=-0.29$, $p=0.000$).
Conclusions: The results of the study show that caregiving burden of caregivers can be reduced by increasing social support.

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EVALUATION OF PAIN IN A GROUP OF THAI ORAL CANCER PATIENTS

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Objectives: To compare pain in oral cancer patients before and after treatment.
Methods: A question from the modified University of Washington Quality of Life Questionnaire in Thai and the Verbal Rating Scale for pain measurement were used for clinical pain assessment in oral cancer patients recruited from Rajvithi Hospital and the Faculty of Dentistry, Chulalongkorn University. Patients were also asked to rank if pain was one of the top three problems related to oral cancer. The patients were interviewed on the day of hospital admission, 25–49 days post-operatively and 25–60 days post-treatment. Wilcoxon signed-rank test for matched paired, paired t-test and McNemar test were used to compare scores pre-treatment and post-treatment.
Results: Of the 51 oral cancer patients, 37 were men and 14 were women. The age range was 22–80 (mean 55.8). Ninety-four percent of patients had squamous cell carcinoma. Fifty-seven percent of patients were treated with surgery and post-operative radiation therapy. Post-operatively, oral cancer patients presented significantly lower levels of pain compared to before operation. Post-treatment, oral cancer patients presented with less pain level compared to the rating before radiation therapy, although the difference did not reach statistical significance. Before operation, pain was the top problem in oral cancer patients; however the problem with pain diminished after operation.
Conclusion: After surgical treatment, oral cancer patients had significantly less pain than pre-treatment. Pain was one of the main concerns in oral cancer patients before cancer treatments.

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RANDOMISED, OPEN-LABEL, PLACEBO-CONTROLLED CLINICAL TRIAL ON THE EFFECT OF SAMITAL® ON CHEMO-RADIOTHERAPY INDUCED MUCOSITIS IN HEAD AND NECK CANCER PATIENTS

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Objectives: The primary objective was to reduce oral mucositis in 30 patients affected by head/neck cancer and underwent chemo-radiotherapy (CT/RT). Mucositis was evaluated according to the WHO scale. The secondary efficacy variables were pain (by VAS scale), irritation, inflammation, and ability to swallow. Maintenance of schedule CT/RT program and global quality of life were also assessed. SAMITAL® was proposed for the treatment of already measurable oral mucositis (≥Grade 3).

Materials/methods: A total of 30 patients were randomised: 20 received SAMITAL® (granules for suspension), 4 times/day, until the end of the CT/RT therapy and 10 patients received placebo. Maximum period of treatment was 7 weeks (50 days).
Results: After SAMITAL® treatment, patients showed statistical reduction and improvement in all parameters of the disease ($p<0.0001$). Mucositis grade improved (33%), together with pain intensity (55%), irritation (31%) and inflammation in throat and oral cavity. Furthermore, the ability to swallow solid food and liquids has been observed only after SAMITAL® therapy.
The side effects in SAMITAL® group were nausea and vomiting in15% patients, but all were able to complete the entire treatment cycle. After placebo treatment, no effects were observed and 50% patients complained of nausea and diarrhoea. Furthermore, they all withdrew after 2 weeks. Moreover, none of them completed the 7-week treatment.
Conclusions: This placebo-controlled trial showed that SAMITAL® is generally effective and safe (Grade ≤1 toxicity) in the treatment of oral mucositis induced by chemo radiotherapy.

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GENDER AS A PREDICTOR OF BURDEN IN CAREGIVERS OF PATIENTS WITH ADVANCED CANCER

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Patients & methods: Research evidence about gender differences in caregiving burden indicates that female caregivers are more likely to report greater burden than male. The aim of this study was to assess whether
1) patients' gender influences the perception of caregivers' burden
2) gender determines differences between male and female caregivers of advanced cancer patients in terms of perception of burden and psychological distress.
The sample consisted of 100 Greek patients undergoing palliative radiotherapy and their primary caregivers (PCs). They both provided their demographics while PCs completed Oberst Caregiving Burden Scale (OCBS), Bakas Caregiving Outcomes Scale (BCOS) and Hospital Anxiety and Depression Scale (HAD).
Results: The majority of patients were male (63%) with a mean age 63.9 years and of PCs (76%) were female with a mean age 52.9 years. Statistical analysis revealed that male patients caused more total score of caregivers' burden in BCOS ($p=0,001$), more anxiety ($p<,0005$) and more depression ($p=0,001$). Female PCs scored higher in OCBS-D ($p=0,045$), meaning that perceived caregiving tasks more burdensome than male. Moreover, female reported less total score in BCOS
($p<, 0005$), implying that every day life has got worst. Finally, female PCs scored higher in HAD, meaning that they reported higher depression ($p<, 0005$) and higher anxiety ($p=0,001$) than male PCs.
Conclusions: Despite study limitations, the results of this first Greek study assessing gender differences in caregiving burden highlight that caring process can be more demanding for female, and the importance of developing special intervention programs for them.

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OBJECTIVE ASSESSMENT OF SPEECH QUALITY OF PATIENTS TREATED FOR HEAD AND NECK CANCER

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Objectives: In clinical practice, speech quality is mainly described subjectively by speech therapists or by patients reported outcomes. These techniques for describing the perceptual quality of speech of head and neck cancer patients are not powerful and accurate enough to allow wide sharing of data and information between groups of therapists and surgeons working in different hospitals. The purpose of this study is to investigate the validity of objective analysis of speech by an Artificial Neural Network.
Methods: Speech recordings of 51 head and neck cancer patients 6 months after treatment and of 18 control speakers were subjectively evaluated by trained listeners regarding intelligibility, nasal resonance and articulation. The EORTC QLQ-H&N35 speech scale was used as patient reported outcome. Objective analysis of the speech features nasalance and voicing was performed by an Artificial Neural Network: ANN-nasalance and ANN-voicing.
Results: ANN-nasalance differentiated patients from controls and correlated significantly with intelligibility, articulation and nasal resonance. ANN-voicing also differentiated patients from controls and correlated

significantly with articulation and intelligibility. Within patients, ANN-voicing differentiated patients regarding tumour stage. No differences were found regarding tumour location. No significant correlations were found between ANN-nasalance and ANN-voicing and patient reported outcome.

Conclusions: Objective artificial neural network analysis proved to be feasible and valid. Results contribute to further development of a multidimensional speech evaluation tool.

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EFFICACY OF SAMITAL® GRANULES FOR ORAL SUSPENSION TO TREAT DIGESTIVE TRACT MUCOSITIS INDUCED BY CHEMOTHERAPY IN PEDIATRIC PATIENTS

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Objectives: SAMITAL® efficacy was assessed as reduction of oral mucositis WHO Scale grades. Secondary outcomes: reduction of stomatitis, necrosis and over-infection, extension to esophagitis, gastritis and enteritis (dysphagia, nausea, vomiting or diarrhea), plus recovery of functional capacity (pain, dysphagia and feeding), or possible adverse events.

Materials/methods: SAMITAL® sachets (3–4 times/day, 3–21 days/cycle) were compassionately administered to 20 hospitalized pediatric patients with hematological and solid neoplasms for 35 episodes of severe chemotherapy-induced mucositis.

Results: SAMITAL® showed significant clinical improvement over conventional therapy, with prompt reduction of pain, mucosal erosions, bleeding, dysphagia/feeding impairment and patients overall condition and life quality in an average of 93%, 11 days and 36 sachets used. Also, safety and tolerability without local or systemic pharmacological, allergic, toxic, synergistic-antagonistic side effects to associated therapy was confirmed through objective clinical, instrumental and laboratory controls. Therapeutic effect remained local on the mucosa. Patients treated with SAMITAL® in advance to new chemotherapy cycles reduced severity and duration of subsequent mucosal damage.

Conclusions: SAMITAL® controlled severe mucositis, improved recovery of lesions, reduced progression and duration without side effects. Results supported a standard Phase II Clinical Protocol (under IRB registration) on 60 new pediatric patients at the same center.

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ANTISENSE STAT3 OLIGODEOXYNUCLEOTIDE ENHANCES RADIOSENSITIVITY OF B16 MELANOMA CELLS

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Objective: Using mouse melanoma B16 cancer cell lines, we investigated whether inhibition of STAT3 expression and activation could reduce the resistance of tumor cells to radiation therapy and serve as a radiosensitizer in vitro.

Methods: Antisense oligodeoxynucleotides were applied to block STAT3 at the mRNA level and the Western blot was used to study STAT3 protein expression. In addition, MTT and flow cytometry. assay were performed to determine the proliferative of B16 cells.

Results: Our data showed a significant decrease in cell viability and an increased fraction of early apoptosis in those groups tansfected with ASO-STAT3 followed by different doses of γ-irradiation. Blocking the STAT3 pathway enhanced the damage of γ-irradiation to B16 cells, inhibited proliferation and promoted apoptosis, thus heightening the radiosensitivity of tumor cells.

Conclusions: Antisense STAT3 Oligodeoxynucleotide Enhances Radiosensitivity of B16 melanoma cells.

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A RANDOMIZED DOUBLE-BLIND PLACEBO-CONTROLLED CROSS-OVER TRIAL EVALUATING DEXAMETHASONE BEYOND 24 HOURS FOLLOWING MODERATELY EMETOGENIC CHEMOTHERAPY IN WOMEN WITH BREAST CANCER

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Objectives: A randomized, double-blind, cross-over trial to compare dexamethasone (D) versus placebo (P) for delayed emesis in chemotherapy (CTh)-naïve women with breast cancer treated with moderately emetogenic CTh.

Methods: All patients received IV granisetron and D pre-CTh and oral granisetron on day 2. Patients were randomized to oral D (4 mg bid) or P for 48 hours, and changed to the alternative treatment for cycle 2. Primary endpoints were:

(i) patient preference;

(ii) difference between cycles in change in QOL (EORTC-QLQ-C30) from day 1 to 8.
Secondary endpoints were emesis (FLIE; patient diaries) and the Dexamethasone Symptom Questionnaire.
Results: Mean age of the 94 women was 51 yrs (range 27–76); 15 received AC and 79 FEC. Thirteen women withdrew pre-cycle 2 with no difference in rates or reasons for withdrawal between arms. Thirty-one women preferred P and 37 preferred D (54% of those with a stated preference; 95% CI:42–67%); 12 stated no preference. Of those preferring D, 54% rated it 'much better', compared with 39% for P. Patients had increased symptoms and decreased QOL from D1 to D8 in both cycles. There was greater decrease in global QOL (p=.06) and greater increase in pain (p=.04) when patients received D. No other symptom/QOL domains were significantly different. A non-significant decrease in vomiting intensity and delay in onset of vomiting was observed when receiving D, with no difference in nausea.
Conclusions: No difference was found in patient preference, QOL or symptoms regardless of whether D or P was used for delayed emesis after moderately emetogenic CTh.

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ONCOLOGICAL EMERGENCIES: HOW TO ASSURE THE CONTINUITY OF THE CARE?

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Objectives: The care of cancer patients with emergency problems presents a challenge not only to medical oncologists but also to clinicians involved in emergency medicine. The guidelines propose to the unspecialized participants (and in particular those of the emergency services of hospitals or networks of care) recommendations of practices of care of an oncological emergency, during the first 24 hours.
Methods: For the first edition of those guidelines, four common oncological emergencies seen in patients with solid tumors were compiled: febrile neutropenia, metastatic spinal cord compression, malignancy associated hypercalcaemia and superior vena cava obstruction. A multidisciplinary workgroup made up of general clinicians, physicians of emergency unit, oncologists and nurses. Guidelines were elaborated according to the usual methodology of the RRC including a multidisciplinary regional workgroup made up of general clinicians, physicians of emergency unit, oncologists and nurses) which analyzed the scientific literature and the practices validated to propose the synthesis.
Results: This production besides benefited, further to the proposition of the regional workgroup to the other regional networks, the national procedure of validation: an interregional group of work and second reading then a national validation in workshop organized under the aegis of the AFSOS (French-speaking Association for the Care Oncologic of Support) and of the UNR-santé (National Union of the Networks of health).
Conclusion: These guidelines must be enriched of new themes like transfusion in emergency, acute pain, bowel occlusion syndrom and will be widely distributed to guarantee a good continuity of the care for cancer patient.

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INEFFECTIVE ABSORPTION OF A MEAL-SIZE, ORALLY ADMINISTERED GLUCOSE BOLUS DURING METHOTREXATE (MTX)-INDUCED GASTROINTESTINAL MUCOSITIS IN A RAT MODEL

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Objectives: Patients with chemotherapy-induced gastrointestinal mucositis often suffer from weight loss and malnutrition. We developed a MTX-induced mucositis rat model to study nutrient digestion and absorption. We previously showed that traces of glucose are absorbed normally during mucositis. Here, we studied absorption of a meal-size, orally administered glucose bolus during mucositis.
Methods: Wistar rats received a jugular vein catheter implantation and were i.v. injected with MTX (60 mg/kg) or NaCl 0.9%. Four days later, we started a continuous i.v. infusion with trace amounts of [6,6-$^{2}H_2$]glucose to calculate endogenous glucose metabolism. After two hours, we orally administered a [1-^{13}C]glucose-enriched glucose bolus (2 gr/kg) and quantified appearance of labeled glucose in the blood for another 4 hours. Furthermore, blood glucose and plasma insulin levels were frequently determined. Finally, we collected the small intestine.
Results: MTX-treated rats suffered from severe mucositis, as shown by profound villus atrophy, epithelial damage, increased mucosal MPO levels (41.5-fold) and decreased plasma citrulline levels (6.6-fold), as compared to controls

(both $p<0.01$). Shortly after bolus administration, blood glucose and plasma insulin levels started to rise only in controls, and were significantly increased, as compared to MTX-treated rats ($p<0.05$). During the experimental period, total glucose absorption was 5.7-fold decreased in MTX-treated rats, as compared to controls (15% versus 85% respectively of the administered glucose bolus, $p<0.01$).

Conclusion: We conclude that absorption of a meal-size, orally administered glucose bolus is severely decreased during mucositis. Therefore, bolus feeding seems not an adequate method to administer glucose to mucositis patients.

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EFFICACY OF SAMITAL® GRANULES FOR ORAL SUSPENSION IN THE TREATMENT OF DIGESTIVE TRACT MUCOSITIS INDUCED BY CHEMOTHERAPY IN ONCOHEMATOLOGICAL PATIENTS

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Objectives: SAMITAL® efficacy was assessed as reduction of oral mucositis WHO Scale grades in patients affected by hematological neoplasms. Secondary outcomes: were reduction of stomatitis, necrosis and over-infection, extension to esophagitis, gastritis and enteritis (dysphagia, nausea, vomiting or diarrhea); recovery of functional capacity (pain, dysphagia and feeding), or possible adverse events.

Materials/methods: SAMITAL® sachets (3–4 times/day, 5–14 days/cycle) compassionately administered to 25 adult patients with hematological cancers for 36 episodes of severe chemotherapy-induced mucositis.

Results: SAMITAL® showed significant clinical improvement over conventional therapy, with prompt reduction of pain, mucosal erosions, bleeding, dysphagia/feeding impairment, patients overall condition and life quality in an average of 95%, 8,5 days and 26 sachets used. Also, safety and tolerability without local or systemic pharmacological, allergic, toxic, synergistic-antagonistic side effects to associated therapy was confirmed through objective clinical, instrumental and laboratory controls. Therapeutic effect remained local on the mucosa. Patients treated with SAMITAL® in advance to new chemotherapy cycles reduced severity and duration of subsequent mucosal damage.

Conclusions: SAMITAL® controlled severe mucositis, improved recovery of lesions, reduced its progression and duration without any local or systemic side effects. Results supported a standard Phase II Clinical Protocol (under IRB registration) on 40 new adult patients at the same center.

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ANTIEMETIC EFFECTIVENESS OF PALONOSETRON AND FIRST-GENERATION SEROTONIN INHIBITORS FOR HIGH OR MODERATE EMETIC RISK CHEMOTHERAPY IN THE APREPITANT ERA

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Objectives: Palonosetron(PAL) has shown better efficacy than ondansetron and dolasetron in preventing chemotherapy-induced nausea and vomiting(CINV) in patients receiving moderately emetogenic chemotherapy, and similar efficacy to ondansetron in preventing CINV in patients receiving highly emetogenic chemotherapy. We assessed that PAL is still preferred over the other serotonin inhibitors for high or moderate emetic risk chemotherapy in the aprepitant era.

Methods: A retrospective analysis was made of all patients who underwent serotonin inhibitor, aprepitant and dexamethaxone for high or moderate emetic risk chemotherapy between July 2009 and January 2011. Group A received PAL, aprepitant and dexamethaxone. Group B received first-generation serotonin inhibitors (ondansetron, granisetron or dolasetron), aprepitant and dexamethaxone.

Results: Three hundred seventy patients were included in the analyses: 223 patients in the Group A and 147 patients in the Group B. 260 patients received highly emetogenic chemotherapy and 110 patients received moderately emetogenic chemotherapy. No case of grade 3–4 nausea/vomiting was noted. There were no significant differences between Group A and Group B for both acute and delayed CINV. The proportion of patients with a emesis-free during the acute phase(0–24 h) was similar in both groups: 174 of 223 patients(78%) in the Group A *vs* 111 of 147 patients(76%) in the Group B. The proportion of patients with a emesis-free during the delayed phase(24–120 h) was similar in both groups: 150 of 223(67%) *vs* 104 of 147(71%).

Conclusions: In aprepitant era, all of the serotonin inhibitors seems to be equally effective for high or moderate emetic risk chemotherapy.

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EMOTIONAL WELL-BEING AFTER CANCER: MOOD STATES, ANXIETY AND DEPRESSION IN LONG-TERM CANCER SURVIVORSHIP

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Objectives: Since long-term cancer survivorship is a reality for a growing number of persons diagnosed with cancer, the investigation of their emotional well-being is highly relevant from a clinical perspective as well as for research purposes. In this study, we set to assess mood states, anxiety and depression in a sample of long-term cancer survivors, who had completed treatment from five years or more.
Methods: 105 Italian long-term cancer survivors were administered the Profile of Mood States, the State Trait Anxiety Inventory, and the Zung Depression Scale.
Results: In comparison with Italian normative data from general populations, the enrolled sample showed more Anger-Hostility ($p=0.013$) and more Fatigue-Inertia ($p=0.027$), but not more Tension-Anxiety, Depression-Dejection, Confusion-Bewilderment or less Vigor-Activity. It also showed less state anxiety ($p=.001$), but neither more nor less trait anxiety. According to clinical cut-off provided for the general population, about 20%, 10% and 6% of our sample displayed a mild, moderate and severe depression. No associations between the tested dimensions and cancer diagnosis (lymphoma vs. solid tumor), years from treatment completion (5–10 vs. 10+) OR educational status were found. Gender seemed to be an important variable, with females reporting more Tension-Anxiety, Depression-Dejection, Confusion-Bewilderment, Fatigue-Inertia, Trait Anxiety, Depression and less Vigor-Activity than males.
Conclusions: Anxiety and depression do not seem to affect long-term cancer survivors enrolled in this study more than the general population. However the registered higher levels in anger and fatigue suggest that survivors' well-being can be impaired for a long period after the completion of cancer treatments.

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POST-TRAUMATIC GROWTH: POSITIVE LIFE CHANGE RELATED TO CANCER

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Objectives: A growing literature documents that positive life changes may accompany the experience of cancer (Lechner et al., 2006; Stanton et al., 2006) and defines them *posttraumatic growth* (PTG) (Tedeschi & Calhoun, 2004). The aim was to verify the presence of PTG in a group of cancer patients. More specifically, the differences in anxiety, depression, intrusion, avoidance, psychological distress, and coping strategies between patients that reported PTG *vs* patients that didn't report PTG has been tested.
Methods: 130 cancer patients, prevalently diagnosed with Stage I (28%) or Stage II (28%) breast cancer (65%) or colon-rectal cancer (27%) completed a questionnaire composed by: the Post-traumatic Growth Inventory (Tedeschi, Calhoun, 2004); the Hospital and Anxiety Depression Scale (Costantini et al., 1999); the General Health Questionnaire (Goldberg et al., 1997); the Impact of Event Scale (Horowitz, 1979); the Brief Cope Questionnaire (Carver, 1997).
Results: Results show that the 47% of patients didn't grow, the 20% grew moderately and the 33% grew highly.
Patients that didn't grow reported lower level of a) anxiety ($F=3.55$, $p<.05$), b) avoidance ($F=3.73$, $p<.05$), c) psychological distress ($F=4.62$, $p<.01$) than patients with moderate level of PTG. The same patients reported lower level of intrusion ($F=8.8$, $p<.000$) than patients with high level of PTG. Further, who didn't grow use less frequently problem focused and proactive coping strategies compared to patients with both moderate and high level of PTG.
Conclusion: Cognitive and emotional engagement is necessary to foster posttraumatic growth.

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EFFECT OF GOSHAJINKIGAN (TJ-107) ON OXALIPLATIN-INDUCED SENSORY NEUROTOXICITY: SAFETY ANALYSIS OF A PLACEBO-CONTROLLED, DOUBLE-BLIND, RANDOMIZED PHASE II TRIAL GONE

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Background: Oxaliplatin-induced peripheral neuropathy (OPN) often results in the early discontinuation of oxaliplatin-based therapy. In a retrospective study, the Japanese traditional medicine TJ-107 was associated with reduced OPN. We performed a randomized trial to assess the effect of TJ-107 to prevent OPN.
Methods: From May 2009 to March 2010, ninety-three colorectal cancer patients receiving FOLFOX were randomized to TJ-107 (7.5 g/day) or placebo in a double-blinded manner.OPN was assessed at baseline, every two weeks until Cycle 8, and every four weeks until the 26th week according to CTCAE and patient-questionaires were used.The primary endpoint was the incidence of Grade 2 or higher OPN after eight cycles of chemotherapy. The secondary endpoints were the grade of OPN, response rate (RR), and safety.
Results: Eighty-nine patients (44 TJ-107, 45 placebo) were available for analysis. Data are summarized in the table. The RR was 55.5% in the TJ-107 arm and 39.1% in the placebo arm. There were no grade3 liver dysfunction and no differences in other side-effects in each arm.
Conclusions: TJ-107 was shown to be efficient in reducing OPN. It is safe and does not reduce the clinical activity of oxaliplatin.

	OPN at the 8th cycle			**OPN at the 26th week**		
	TJ-107	Placebo	Relative risk [95%CI]	TJ-107	Placebo	Relative risk [95%CI]
Grade2	27.0%	30.7%	0.88 [0.43–1.78]	25.7%	44.1%	0.58 [0.30–1.15]
Grade 3	2.7%	10.2%	0.26 [0.03–2.25]	5.7%	11.7%	0.49 [0.10–2.48]

[Table 1]

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NEUROPSYCHOLOGY IN CANCER SURVIVORSHIP: IS POST-TREATMENT COGNITIVE IMPAIRMENT A MYTH OR A REALITY?

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Objectives: In the last few years, multiple surveys on cognitive adverse effects of chemotherapy have been undertaken, showing that several cancer patients exhibit cognitive disorders after treatments. Anecdotal reports of cognitive deficits during and after exposure to chemotherapy is also increasing. Nevertheless, not all studies confirm these data. The aim of this study is to provide objective measures of cognitive functioning in long-term cancer survivors through neuropsychological tests.
Methods: 105 long-term cancer survivors, priory diagnosed with lymphoma or breast, gastrointestinal, and genito-urinary cancer, free of evidence of disease at least five years post the completion of treatment, were individually administered a battery of neuropsychological tests. Memory, attention and executive functions were assessed.
Results: Although no participants had suffered for brain injury and all had completed cancer treatment five or more years prior to testing, many of them complained of difficulties in memory and planning abilities. At standardised neuropsychological tests, for the most part cancer survivors exhibit average cognitive profile. Nevertheless, about 46% of this group showed poorer performance respect to normative data in at least one investigated area. Working memory seemed to be the weakest function.
Conclusions: Further investigation is needed to understand and comprehensively describe cognitive disorders associated with cancer therapy, particularly long-term after treatments. Our study suggests the presence of a complex reality of cognitive difficulties in long-term cancer survivors. In order to help patients maintain personal and work autonomy, specific and high sensitive neuropsychological assessment serves the purpose of recognizing deficits and outline plans for compensative training.

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BREAST CANCER IN YOUNG WOMEN: EMOTIONAL WELL-BEING AND QUALITY OF LIFE DURING HOSPITALIZATION FOR SURGERY

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Objectives: Cancer is always a threatening life event. In adulthood it interferes with important individual purposes, tasks and dreams, such as professional career and parent-

hood. The present study is the first step of a larger prospective research on young women's (aged 18–44 years) quality of life and emotional well-being during the course of their breast cancer experience from diagnosis to 2-year post-treatment follow-up.

Methods: 53 young women (age range: 18–44 years) were administered the Hospital Anxiety and depression Scale, the Short Form 36, the Cancer Related Communication Problems and the Multidimensional Self-Perceived Social Support during hospitalization for surgical treatment of primary breast cancer.

Results: Anxiety, depression and quality of life scores seemed to be comparable with those provided by literature for other oncological samples, whereas scores for perceived support were higher than those of general norms. No major communication problems seemed to be present at this point in the disease trajectory (M=1.8, range: 1–3). Physical functioning, Role-physical limitation, Vitality, Social functioning, Role-emotional limitation, Mental health were associated with anxiety and depression ($p<.05$).

Conclusions: At the beginning of their disease trajectory, young women with breast cancer do no appear more psycho-socially vulnerable than other cancer patients. Further investigation in subsequent illness phases are necessary. The detected associations between quality of life and mood states suggest the need for a precocious emotional well-being screening.

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A SURVEY OF THE IMPLEMENTATION OF CROATIAN GUIDELINES FOR USE OF EICOSAPENTAENOIC ACID AND MEGESTROL ACETATE IN CANCER CACHEXIA SYNDROME

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Objectives: Croatian guidelines for use of eicosapentaenoic acid (EPA) and megestrol acetate(MA) in cancer cachexia syndrome (CC) were developed in 2007 by a team of health care professionals in order to standardize therapeutic procedures for nutritional support in patients with CC. These guidelines were published in the Croatian medical journal. Simultaneous use of EPA (2.2 mg/day) and MA (400 mg/day) for 8 weeks has been recommended. In January 2011, we designed a survey that aimed to assess the level of implementation of Croatian guidelines for use of EPA and MA in clinical practice.

Methods: The questionnaire included 5 questions and a total of 128 oncologists completed a questionnaire.

Results: 73% of oncologists confirmed that they are familiar with Croatian guidelines for the use of EPA and MA in CC. Most oncologists 89%, that were familiar with Croatian guidelines, changed their approach in treating patients with CC. 83% of respondents use MA in treating patients with CC and 84% of them use enteral nutrition formulas enriched with EPA. 71% of respondents reported the use of enteral nutrition enriched with EPA in combination with MA in the therapy of patients with CC.

Conclusions: Most Croatian oncologists that are familiar with our guidelines, have changed their approach in treatment of CC and started using EPA and MA in treating of CC patients. However, we still find it neccessary to keep encouraging our oncologists to use nutritional support, including a combination of EPA and MA in therapy of CC, as recommended in Croatian guidelines.

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ANTHRACYCLINE INDUCED CARDIOTOXICITY IN BREAST CANCER

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Objective: To study the profile of breast cancer patients with cardiotoxicity following anthracycline based chemotherapy at a tertiary referral cancer centre in India.

Methods: Consecutive patients of breast cancer on or post anthracycline based chemotherapy referred for 2Dechocardiography in a two year period were studied (2006–2007). Details of age, co-morbidities, drug type, dose, 2Dechocardiography, radiotherapy and surgery were recorded.

Results: 1452 breast cancer patients were seen in the study period. Of these 57(3.9%) patients diagnosed to have cardiotoxicity. 47patients (82.5%) had received doxorubicin and 10 patients (17.5%) received Epirubicin as combination chemotherapy.15 patients(31.91%) received cumulative dose of doxorubicin <=200 mg/m2, 31 patients (65.95%) 250-300 mg/m2 and 1 patient received >300 mg/m2. The median age was 50 years. Age was a risk factor for developing cardiotoxicity [OR 2.32 (CI 95%; 1.12-4.78) P=0.02]. Hypertension (22.80%) is an important risk factor for progressive LV dysfunction[OR 3.71 (CI 95% 1.03-2.38) P=0.0003]. Cardiotoxicity was detected at a median of 9 months (range 4 days–8.6 years) from receiving the last dose of chemotherapy. 17/57 patients (29.82%) presented with symptoms & signs of cardiac failure.8/17 patients required admission to Intensive care unit.3/57 patients (5.26%) expired.

Conclusions: Prevalence of LV dysfunction is 3.9%. Patients developed cardiotoxicity post anthracyclines with lower cumulative doses. Increased age and hypertension were risk factors for developing cardiotoxicity. Duration of detection of LV dysfunction ranges from 4 days to 8.6 years, thus we emphasize the need for both early and long term regular cardiac evaluation post anthracycline treatment.

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FATIGUE, ANXIETY, DEPRESSION AND COGNITIVE FUNCTION IN PATIENTS WITH CANCER IN PALLIATIVE CARE

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Objectives: This study aimed to analyze the effects of fatigue, anxiety and depression on sustained attention and mental flexibility of patients with cancer in palliative care.
Methods: Sixty-seven outpatients were assessed once through Continuous Reaction Times-CRT (sustained attention; cutoffs 10th percentile>165 ms, 50th>195 ms, 90th>250 ms) and Trail Making Test B-TMTB (mental flexibility/attention; no cutoff adopted). The Fatigue Pictogram (cutoff ≥3) and the Hospital Anxiety and Depression Scale (cutoff>10) were used. Mann-Whitney test, Spearman correlations and linear regression models were applied.
Results: 56.7% male, age=53.4y (SD=8.6), schooling=9.9y (SD=4.4), 74.6% able to carry on normal activity, 68.7% gastrointestinal cancer. Fatigue (52.2%), anxiety (20.9%) and depression (17.9%) were observed, but the means were not high: fatigue (2.58, SD=0.9), anxiety (6.39, SD=4.1) and depression (6.13, SD=4.0). CRT 50th and 90th percentiles mean scores were above the normal values and the TMTB mean score was almost 3 times slower than the best performance, indicating poor functions. Patients with fatigue had slower reaction times (P=0.047). In the fitted linear model patients with anxiety had better performance on TMTB (P=0.029).
Conclusion: Fatigue, anxiety and depression were frequent and poor mean scores for sustained attention and mental flexibility were also observed. Association was noted between fatigue and slower reaction times. In addition, in the linear model patients with anxiety had better TMTB scores. The small sample size, few patients with depression and anxiety and doubts about adequacy of these tests for palliative care patients could have influenced the results. Further investigation is required.
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PARENTERAL NUTRITION IN INCURABLE CANCER PATIENTS HAVING MILD TO SEVERE INTESTINAL FAILURE: SYSTEMATIC LITERATURE REVIEW AND CASE VIGNETTE BASED SURVEY

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Background: In advanced cancer patients with intestinal failure the indication for parenteral nutrition(TPN) is still controversial. With the new consensual cachexia definition the indication quality for TPN may increase (Fearon and Strasser, Lancet Oncology 2011). We explored current evidence and perform a consensus process, based on case vignettes.
Methods: Systematic literature review(SLR): Search-strings: (cancer, palliative, intestinal obstruction, parenteral nutrition), SLR was furthered by hand search, snowballing and sensitivity testing. Inclusion: All four search strings, original work, English, German. Data extraction: population (age/gender/country/tumor/chemotherapy), intestinal obstruction, parenteral nutrition, outcomes (function/time at home/performance status/quality of life, survival) and cancer cachexia. Vignettes differentiated low and severe intestinal failure and patients with or without cachexia.
Preliminary results: 10 papers (3 citations, 7 abstracts). Evaluation of 5 papers:
194 patients. Cancer types: ovarian and gastrointestinal cancer. 71 patients received radio- or chemotherapy with TPN. 2 papers defined cachexia. Outcomes were: quality of life (2 papers), physical function (0), performance status (4), survival (3) and time at home (1).
Case vignette revealed the importance of data for cancer and treatment, nutritional and psychosocial aspects, physiotherapeutic and psychosocial counselling.
Next steps:
1) Completeness-check of vignettes by the experts.
2) Survey through the MASCC nutrition group by email.
SLR and the vignettes will be provided and experts state if, how and why they would give TPN to the patients.
Conclusion: Given the controversial practices of TPN in advanced, incurable cancer patients this approach might contribute to more clarity in indications and outcomes

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A RCT TO EVALUATE USE OF INTRAVENOUS LIDOCAINE FOR OPIOID REFRACTORY PAIN IN CANCER PATIENTS

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Background: Opioid refractory pain is distressing and notoriously difficult to treat. Relief from adjuvant therapies often occurs after a lag time and retrospective evidence shows benefit of intravenous lidocaine in this setting for pain relief.

Aims: Primary endpoints of evaluation were magnitude and duration of pain relief with a single slow intravenous infusion of lidocaine in opioid refractory cancer pain patients.
Patients and methods: Eligible patients in this randomized double-blind placebo controlled cross over study received intravenous infusion (IVI) of lidocaine and placebo (saline) randomly with a temporal difference of 2-weeks.
Results: Two hundred patients were included in the study. Pain relief was significantly better ($p<0.0001$) and more patients reported a decrease in analgesic requirement ($p<0.0001$) after lidocaine infusion than after placebo. Onset of analgesia was noted at mean of 40.90 ± 13.75 min after initiation of infusion. Mean duration of this analgesia was 7.77 ± 2.35 days after single infusion and significantly more compared to placebo ($p<0.0001$). Side effects observed were tinnitus, perioral numbness, sedation, light-headedness and headache. All side effects were self-limiting in nature and did not require any intervention except termination of lidocaine infusion in three cases.
Conclusions: Single IVI of lidocaine provided a significant magnitude & duration of pain relief in opioid refractory cases with tolerable side effect profile. We need to establish guidelines for its use in patients with opioid refractory pain.

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TEAM FUNCTION IN SPECIALIZED PALLIATIVE CARE TEAMS IN SWEDEN

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Teamwork is a desired standard within palliative care. Common professions in the specialized palliative care teams are physicians, nurses, physiotherapists, occupational therapists and social workers. Creating an effective team with members from different professions has obstacles of professional territoriality, lack of framework and communication issues. Group development with different phases is a given fact. The diversity within a team of health care professionals on duty rosters, create complex, dynamic, parallel team processes that influence the outcome of patient care.
Objective: To explore team function in specialized palliative care teams in Sweden.
Method: In-depth interviews analyzed through content analysis.
Results: Preliminary results from interviews with 15 health professionals; physicians, nurses, physical/occupational therapists and social workers from five teams in Sweden, indicate that staff have neither education nor training regarding work in a team structure. Independent agendas that interfere with the overall team process and the aim of patient treatment and care may surface. The leader of a given situation depends on the issue at hand. Often a form of democratic process decides what action will be taken. Some professions feel marginalized and strive to increase their influence in the team and informal leaders may surface.
Conclusions: Individual characteristics of individual persons among the health care professionals seem to greatly influence how teams work, how teams are organized and how teams function. Formal education in teamwork, clear leadership and team structure as well as ways of working could assist teams in ensuring patients' safety and quality care.

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METHYLPHENIDATE AS NEEDED FOR FATIGUE IN PATIENTS WITH ADVANCED CANCER. A PROSPECTIVE DOUBLE BLIND CONTROLLED STUDY

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Objectives: To evaluate the efficacy of methylphenidate as needed for the management of fatigue in patients with advanced cancer in palliative phase.
Methods: A prospective controlled double blind paired design has been used. Palliative cancer patients with a fatigue score >50 on a 0–100 VAS scale were included. Patients were given 10 placebo tablets and 10 methylphenidate tablets numbered from 1 to 20 and packed in blocs of 4 with 2 active and 2 placebo (randomly arranged). Patients taking at least 3 tablets were regarded as evaluable. Primary

effect parameters were mean differences in VAS for tiredness after 2 and 5 hours in Edmonton Symptom Assessment System (ESAS). With 28 evaluable patients the study has a power of 0.90 to detect a mean difference of 15 between active and placebo tablets.

Results: Thirty-eight patients were included in the study to get 28 evaluable patients.

Mean tiredness score before taking the pill was 74.5 for placebo and 72.4 for methylphenidate. After 2 and 5 hours mean values for placebo were 66.3 and 70.0, while the same values for methylphenidate were 52.3 and 55.9

Mean changes (decrease) for placebo after 2 and 5 hours were 8.2 and 4.5, while the values for methylphenidate were 20.1 and 16.5. Comparing these mean differences the decrease for methylphenidate is significantly larger than for placebo after 2 hours ($p=0.006$) and 5 hours ($p=0.006$).

Conclusion: In this controlled double blind study methylphenidate as needed is significantly better than placebo in relieving fatigue in palliative cancer patients.

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THE EXPRESSION OF TLR PATHWAY MOLECULES IN PERIPHERAL BLOOD MONONUCLEAR CELLS AND THEIR RELATIONSHIP WITH CLINICOMORPHOLOGICAL FEATURES IN LARYNGEAL CARCINOMA

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Introduction: The purpose of this study was to determine the potential role of the toll-like receptor (TLR) pathway molecules such in peripheral blood mononuclear cells as biomarkers for tumor aggressiveness in laryngeal squamous cell carcinoma.

Materials and methods: The analysis of TLR2, TLR4, TRAF6, IRAK1 expression in isolated PBMCs by real-time quantitative PCR as well as IL-6, IL-8 and TNFα levels by ELISA in whole blood from 55 patients with carcinoma of the larynx was performed. The invasiveness of laryngeal carcinomas was evaluated according to tumor front grading, TFG, which included tumor-related features and adjacent stroma-related characteristics of the peripheral edge of tumor infiltration.

Results: This study, for the first time, demonstrated that the expression of the TLRs pathway molecules had a very strong association with the aggressiveness of laryngeal carcinoma. The relationships of TLR2, TLR4, TRAF6, IRAK1 expression with the mode of invasion, the TFG total score as well as IL-8, TNFα production and IL-6 secretion were highlighted. Carcinomas with a lower mRNA level of molecules studied mostly demonstrated a more dispersed type of invasion and higher TFG results as well as higher IL-6, IL-8 and TNFα secretion.

Conclusions: Our findings confirmed the implication of the toll-like receptor pathway molecules in proinflammatory cytokine secretions and their importance as indicators of the aggressive phenotype of laryngeal carcinoma.

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TREATMENT RATES AND RELATED FACTORS OF TREATMENT AND NO-ACTIVE TREATMENT OF KOREAN CANCER PATIENTS, 2001–2005

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Purpose: To investigate treatment rates and related factors of Treatment and No-Active Treatment of Korean cancer patients treatment.

Methods: We merged National Cancer Registry Data and National Health Insurance Claim Data to determine the treatment patterns of 355,255 cancer patients from 2001 to 2005. 'No-active treatment' was defined as the treatment such as operation, chemotherapy, and radiotherapy without curative purpose or literally no-active treatment without any type of treatment.

Result: Of the pancreatic cancer patients, 52.8% had no-active treatments. No-active treatment rates were 37.1% and 34.4% in liver and lung cancer patients. We found that type of cancer with poor prognosis had higher rates of no-active treatment. Breast, colorectal and cervical cancer with better prognosis had low rate of no-active treatment, 2.6%, 9.8%, and 7.6%, respectively.

Under general hospital was highly associated with no-active treatment (adjusted odd ratio [OR], 1.13; 95% confidence interval [CI] 1.12-1.15). Cancer patients with medical aid were more likely to have no-active treatment

compared with the cancer patients with national health insurance (OR, 1.12; 95% CI, 1.10-1.14). The low volume of hospital with small number of bed was more likely to have no-active treatment compared with the large volume of hospital.

Conclusions: The rate of lung cancer patients with no-active treatment, 34.4%, in Korea was higher than 22.0% in Canadian's lung cancer study and 19.0% in US lung cancer treatment study. Using a national database, we found that the rate of no-active treatment cancer patients decreased steadily from 2001 to 2005 in South Korea.

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OCCUPATIONAL THERAPY FOR CANCER PATIENTS - A RANDOMIZED CONTROLLED TRIAL

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Background: Cancer patients often experience serious dysfunctions leading to problems with activities of daily living (ADL) and reduced quality of life. Occupational therapy (OT) is believed to be effective in handling many of these problems, but the evidence is sparse.

Aim: The purpose of this study is to analyze the effects of an occupational therapy intervention targeting ADL problems among cancer patients.

Methods: Primary outcome is self-reported quality of life and secondary outcome is ability to perform ADL.

1. We conducted a randomized controlled trial comparing an OT intervention program with standard treatment and care.

2. We included 288 patients with disabilities treated for cancer at Naestved Hospital.

Inclusion criteria:

- Treated for cancer at Naestved Hospital.
- Karnofsky Performance Status Score: 10–70 on a scale from 0–100.

The intervention took place at the hospital and included goal-setting, training performance of ADL, home assessments, adaptive equipments and supervision of patient and relatives.

Data patient validated questionnaires at baseline, after 2 and 8 weeks including EORTC QLQ-C30 and the ADL taxonomy questionnaire will be used for evaluation.

Preliminary results: The study is ongoing. Inclusion of participants started in march 2010. As of January 2011 we have included 90 patients in the randomized study. Each participant is responding to 3 questionnaires during a follow-up period of 3 months. The response rate of the questionnaires is high, but the recruitment is difficult due to the health status of the patients.

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CHARACTERIZATION OF PERMANENTLY IMPLANTABLE VENOUS PORT ASSOCIATED BLOODSTREAM INFECTION (PABSI) IN PATIENTS WITH SOLID CANCERS: A CASE-CONTROL STUDY

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Objectives: To characterize risk factors and clinical courses of PABSI in solid cancer patients.

Methods: We reviewed the data of solid cancer patients with newly implanted permanent venous port (Port-A) between October 2009 and August 2010 in our medical center.

Results: Fifty-eight patients with 88 PABSI episodes (Gram-negative bacilli (GNB): 51; Gram-positive cocci/bacilli (GPC/GPB): 36; fungus: 18) and 174 controlled patients were analyzed (table). The incidence of PABSI is 1.048 per 1000 catheter-days. Occurrence of PABSI independently predicted poorer overall survival (HR=3.35, $p<0.0001$), in addition to stage (stage 4 vs. others, HR=6.48, $p=0.01$) and GI disease. Chemotherapy (RR=34.27, $p<0.0001$), TPN (RR=8.42, $p<0.0001$), chronic steroid use (RR=34.72, $p=0.006$), and postoperative antibiotics use (RR=3.31, $p=0.009$) independently predicted occurrence of PABSI. In addition, invasive procedures and previous PABSI were significant predictors for GPC/GPB PABSI (RR=8.68, $p<0.0001$) and for fungal PABSI (RR=9.02, $p=0.001$), respectively. The use of prophylactic antibiotics before port-A implantation significantly reduced GPC/GPB PABSI (RR=0.31, $p=0.037$).

Conclusions: Prevention of PABSI in solid cancer patients must consider the different risk factors associated with different pathogen groups.

N(%)	Case(N=88)	Control(N=174)	P	N(%)	Case(N=88)	Control(N=174)	P
Age(Median)	58.15(31.4–79.3)	57.95(14.2–88.7)	0.154	**Mucositis/Diarrhea**	11(12.5)	1(0.5)	<0.0001
Female/male	43/45	93/81	0.514	**Total parenteral nutrition**	44(50.0)	9(5.2)	<0.0001
Stage I–III	1(1.1)	36(24.0)	<0.0001	**Chemotherapy**	85(96.6)	61(35.1)	<0.0001
Stage IV	87(98.9)	138(79.3)		**GI disease (e.g., obstruction, bleeding)**	56(63.6)	78(44.8)	0.005
Neutropenia	19(21.6)	3(1.7)	<0.0001	**Previous bloodstream infection**	40(45.5)	7(4.0)	<0.0001
Survival	21(23.9)	137(78.7)	<0.0001	**Previous PABSI**	36(40.9)	7(4.0)	<0.0001

[Characteristics of case and control patients]

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A FEASIBILITY TRIAL OF A HOME BASED WALKING INTERVENTION IN MANAGING FATIGUE WITH GYNAECOLOGICAL CANCER SURVIVORS

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Aims: To determine the feasibility of a physical activity (PA) behavioural change intervention in managing cancer-related fatigue (CRF) among gynaecological cancer survivors during and post anti-cancer treatments.

Methods: A two arm, single blinded, randomised controlled trial involving 33 sedentary cancer survivors (Stage I–III; ≤3 years post diagnosis), experiencing CRF (mild-severe).Participants were randomly assigned to a behavioural change, moderate intensity home based walking program (n=16) or contact control group (n=17). The primary outcome was CRF (MFSI-SF & FACIT-F). Secondary outcomes included quality of life, physical functioning, body composition, and sleep dysfunction. Programme evaluation included optional focus group interviews (n=16).

Results: Participants were a mean of 8.7 (SD=9.1) months post diagnosis (SD=9.1), with a mean age of 53 (SD=10.3) years. The majority of the sample had a diagnosis of ovarian (n=12) or endometrial cancer (n=11). Significant differences favouring the intervention group were observed for fatigue at 12 weeks and 6 month follow-up (12 week: mean difference = −11.06; 95% confidence interval (CI) = −21.89 to −0.23; effect size (d) =0.13; p=0.046; 6 month: mean difference=−19.48; 95% CI=−19.67 to −19.15; effect size (d) =0.20; p=0.01). Important programme features included the weekly telephone calls, patient-professional relationship, feedback and goal setting.

Conclusions: A PA behavioural change intervention for gynaecological cancer survivors demonstrates potentially meaningful improvements in fatigue, post intervention and at follow- up, and is feasible in terms of participants' adherence and evaluation of the programme. However, confirmation in the form of a larger fully powered RCT is necessary.

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LIVER METASTASES OF ENDOCRINE TUMORS: IS RADIOFREQUENCY ABLATION (RFA) AN EFFECTIVE ALTERNATIVE TREATMENT?

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Objective: To determine the efficiency and safety of RFA as an alternative therapeutic method of liver metastases of endocrine tumors.

Materials-methods: During the last 24 months 19 patients who presented 28 liver metastases of primary endocrine tumors, were treated using radiofrequency ablation, using local anesthesia (lydocaine 2%) after per os or i.m. premedication. Thirteen had carcinoid tumors, six had non-functional endocrine tumors and one had an adrenal carcinoma. Liver lesions measured from 2 to 6 cm. We used two types of needle-electrodes: a seven-array or eleven-array hooked type or spiral type. RFA time was 14–16 minutes. Follow-up consisted of a dual phase abdomen

spiral CT scan. We also monitored liver function tests and tumor markers before and after treatment.
Results: Total tumor necrosis was achieved in 16 patients (83.3%) and partial necrosis in 3 patients (16.6%). Local recurrence occurred in 3 patients (16.6%). In these cases a second session was performed. Minor complications included low-grade fever (7 days after therapy) in 4 patients, moderate pain 2 days after therapy in 5 patients and a small subcapsular hematoma in 1 patient.
Conclusion: RFA is a safe and efficient therapeutic method of liver metastases of endocrine tumors.

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TWO OPEN-LABEL STUDIES OF SAMITAL® GRANULES FOR ORAL SUSPENSION TO TREAT CHEMO-RADIOTHERAPY (CT/RT) INDUCED ORAL MUCOSITIS IN HEAD/NECK NEOPLASMS

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Objectives: An Italian-Chilean case report collection investigated the efficacy of SAMITAL® for treatment of CT/RT-induced mucositis in patients affected by head/neck cancers. Primary outcomes: reduction of the progression of oral mucositis, by WHO Scale grades, and compliance of SAMITAL®. Secondary: oropharyngeal pain intensity and continuity of CT/RT program.
Materials/methods: Twenty eight patients were enrolled. Seven Italian patients were initially treated with SAMITAL® (4 tablets/day). Then a revised formulation (granules for oral suspension in sachets, 4 times/day) was administered to other 7 Italian and 14 Chilean patients with much better compliance for this gel emulsion.
Results: Mucositis improved significantly in all 28 patients. Reduction of pain and dysphagia was 90%. Three of tablets-treated patients (43%) dropped-out reporting stinging, burning sensation (2) and epigastric pyrosis (1). After SAMITAL® sachets were introduced; no tolerability problems or side effects remained. One case under treatment presented a small ulcer due to nutritional mistake (spicy food). Another patient withdrew for personal reasons, even though mucositis had regressed (Grade 3 to 2).
Conclusions: SAMITAL® sachets (21/28 cases) demonstrated: good tolerability, good efficacy for reduction of mucositis, pain control, recovery of swallowing and nutritional impairment; improvement of life quality, overall clinical advantage with completion of CT/RT regimen.

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"CHEMOBRAIN" IN CANCER PATIENTS, DEMAND FOR SUPPORT AND WILLINGNESS TO ATTEND "MEMORY WORKSHOP"

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Chemotherapy can have adverse effects on cognitive functions and quality of life in patients. Cognitive rehabilitation could possibly prevent or attenuate these so-called "chemobrain" effects, as it does for instance in neurodegenerative diseases. Therefore, we wanted to know the patients' view on their cognitive impairments and their willingness to participate to such a cognitive rehabilitation program. To this aim, we conducted a survey called « memory, attention and concentration » in three cancer day care departments (Francois Baclesse Center, Caen, Henri Becquerel Center, Rouen, Jules Bordet Institute, Brussels). The survey included 551 patients, diagnosed with any type of cancer and under treatment at the time of the research. Data were analyzed according to different variables such as age, sex or type of cancer. Results show that 42% of the patients declared having memory disorders. Respectively 26% and 19% of them reported having concentration and attention disorders. Importantly, 46% of the patients correlated these difficulties to their treatment. In addition, 83% of the patients declared they would participate to an evaluation of their memory abilities and 82% stated that this assessment was one of the priorities in the management of their disease. Based on these results, we

first decided to open memory consultations in order to support patients with cognitive complaints. Furthermore, since 66% of the patients declared they would participate to a rehabilitation program, we are presently setting up a multicenter study to assess the efficiency of such a program to improve cognitive skills and quality of life.

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THE ROLE OF PERCUTANEOUS CT-GUIDED RADIOFREQUENCY ABLATION (RFA) OF HEPTOCELLULAR CARCINOMA (HCC) INTRAHEPATIC RECURRENCES, IN PATIENTS INITIALLY TREATED WITH HEPATOCTOMY

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Objective: To evaluate the efficacy of RFA in patients with intrahepatic recurrence of hepatocellular carcinoma.
Material and method: During the last four years, 41 patients with 56 recurrent lesions of HCC, who were initially treated with partial hepatectomy, underwent a total of 67 RFA sessions. Number of lesions ranged between 1–3 with a mean size of 2.95 cm.
Fortyfive minutes before each session bromazepan per os and pethidine hydrochlorique intramusculary were administered. RFA was performed using expandable electrodes. A pulsed RF energy was applied for 12 to 15 min. A dual-phase dynamic contrast enhanced CT was performed after the electrode removal to evaluate the immediate lesion response to the ablation. Follow up was performed at 1, 3, and 6 months post-RFA and every 6 months afterwards.
Results: Complete response was seen in 48/56 lesions (85.7%), whereas 8/56 showed partial necrosis and underwent a second session.
Six patients (14.6%) who presented new lesions within a year, and 5 patients (12.2%) who presented local tumor recurrence at the ablated site 6–12 months after the first RFA session, underwent a second session as well. Overall survival was 29.61±12.6 months.
Major complications did not occur.
Conclusion: RFA seems to be an efficient treatment modality of intrahepatic recurrences in patients already surgically treated.

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STUDY OF NURSING CARE SATISFACTION OF PATIENTS RECEIVING CHEMOTHERAPY

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Purpose: Patient satisfaction has become an important issue to demonstrate the best-performance besides discover areas in need of improvement in nursing practice. We examined the clinical and demographic factors associated with patient satisfaction in a heterogeneous sample of cancer patients.
Methods: The study was conducted between April 2010 and July 2010 with 210 patients, from Oncology Department of Ege University Medical School Hospital, Turkey. Permission has been taken from the departments and patients. Patients completed patient information questionnaire and the Newcastle Satisfaction with Nursing Scales (NSNS). The data was analyzed with the statistical tests of "independent sample t-test" and "Chi-Square" using SPSS 16.0 software.
Results: The mean age of our patient population was 51.5 years (SD=11±97, range 19–79), with a preponderance of females (67.1%). There were 19 items on the scale, each a 5-point Likert scale. Results indicates that the satisfaction with nursing care was overwhelmingly positive, with 41.5% of patients giving a rating of 90% or higher. The item with the least positive rating was "The adequate information nurses gave to you about your condition and treatment"; 37.6% of patients were completely satisfied, 28.6% very satisfied, 25.7% quite satisfied, 6.7% barely satisfied and 1.4% not at all satisfied. Satisfaction level was found low in patients who have a job and receiving chemotherapy more than 3–4 times a month than receiving chemotherapy 1–2 times a month.
Conclusions: It was identified that, patients are influenced by nurses' personal behaviors, and outpatient chemotherapy patients want sufficient information and emotional support.

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THE MANAGEMENT OF PAPULOPUSTULAR ERUPTION IN CANCER PATIENTS RECEIVING EGFR INHIBITORS: A SINGLE CENTER EXPERIENCE

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Background: Papulopustular eruption is the most common adverse effect of antineoplastic therapy with epidermal growth factor receptor inhibitors(EGFRIs). Appropriate management of this rash is necessary to improve quality of life and patient's compliance.
Methods: We performed a retrospective analysis of treatment outcomes in cancer patients receiving EGFRIs, who were referred for papulopustular eruption to the specialized Dermatology Unit of the Oncology Department at "Sotiria" General Hospital.
Results: In a 15 month period, 100 patients were referred to our Unit: 44 were diagnosed with grade-1, 48 with grade-2 and 8 with grade-3 eruption. Metronidazole cream 0.75% was the most commonly used topical agent for grade 1 reactions (18 patients), followed by pimecrolimus cream 1% (14 patients), topical corticosteroids (13 patients) and clindamycin gel (10 patients). The respond rates(RR) of topical treatment were comparable for metronidazole, pimecrolimus and corticosteroid preparations (66%, 78%, 69% respectively) and lower for clindamycin gel (25%). Tetracyclines were the most commonly used oral treatment (47 patients), followed by azithromycin (22 patients) - whenever tetracyclines were not well tolerated or during summer period-. The RR for tetracyclines were slightly higher than those for azithromycin (75%vs.65%), however more patients under tetracyclines reported treatment toxicity.
Conclusions: Subspeciality clinics, specifically oriented to treat patients under EGFRIs are needed in order to enhance compliance to treatment. Metronidazole cream and oral tetracyclines should be the first-line treatment for grade-2 reactions. Azithromycin may be a viable option against skin toxicities, when first-line treatment has been poorly tolerated. Randomized controlled trials are needed to establish evidence-based paradigms for the treatment of EGFRIs skin eruptions.

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EVALUATING DELAYED CUTANEOUS REACTIONS TO SYSTEMIC VINORELBINE ADMINISTRATION

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Introduction: Injection site reactions occur in patients receiving intravenous vinorelbine via peripheral administration. These reactions can result in pain and discomfort that can affect the patient's quality of life and reduce compliance. The objective of this study is to determine the incidence and management outcome of delayed cutaneous reactions to vinorelbine in our patients.
Method: All patients in National Cancer Centre Singapore from January 2006 to October 2010, who experienced delayed cutaneous reactions to vinorelbine was reviewed. Grading for injection site reaction was based on CTCAE.
Results: Total of 3987 intravenous doses of vinorelbine were administered to 619 patients during the review period. Thirty-seven administered doses (0.93%) resulted in delayed cutaneous reactions, reported by 35 patients (5.65%). The mean dose of administered was 23.57 mg/m2 (range: 15.15–30.50 mg/m2). Twenty-eight patients (80%) had Grade 2 reaction, 7 patients (20%) had Grade 1 reaction. The cutaneous reactions appeared about 3 days (range: 1 to 7 days) post administration, confined to areas surrounding cannulation sites. Typically presented as erythema, developing into blisters, and often accompanied by pruritus, pain and/or swelling. All patients had uneventful recovery. Management included warm compress for 15 minutes and heparinoid 0.3% w/w cream to the affected area 3 to 4 times daily. Symptom management included—oral antihistamines to relieve itchiness, oral analgesics to relieve pain, topical corticosteroid creams for the rashes.
Conclusion: Incidence of delayed cutaneous reactions to vinorelbine given via peripheral administration is relatively low. The management strategies employed is effective in ameliorating reaction.

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EFFECT OF CHRONIC CONSUMPTION OF A COMMERCIAL BEVERAGE CONTAINING AÇAÍ (*EUTERPE OLERACEA* MART.) UPON LIPID PROFILE IN CANCER CACHEXIA

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Objectives: Cancer cachexia is a multifaceted syndrome. Chronic systemic inflammation, partly triggered and sustained by cytokines, as well as increased oxidative stress, contribute to the pathogenesis of this complex metabolic disorder. Açaí (Euterpe oleracea Mart.) is among the most economically significant plants in Brazilian Amazon and is rich in phytochemicals with anti-oxidant, anti-inflammatory and anti-cancer properties. The effects of the consumption of a commercial beverage containing açaí on lipid metabolism in cachectic Walker 256 tumour-bearing rats were investigated.
Methods: Animals were randomly assigned to a control (CTR), tumour-bearing (TB) and tumour-bearing supplemented with açaí (TBA) group. TBA groups received a commercial beverage containing açaí, for 14 days. Food and liquid intake, as well body weight were assessed every two days. Plasma glucose, triacylglycerol, cholesterol, TGO, TGP and gamma-GT were assessed by commercial kits.
Results: Plasma glucose, cholesterol, TGO, TGP and gamma-GT were not altered in the experimental groups. There was an increase in plasma triacylglycerol (85%, $p<0.01$) in TBA in comparison to TB.
Conclusion: Açaí presents a low sugar content and is rich in lipids, with high levels of unsaturated fatty acids, phytosterols and dietary fiber, all these which could improve lipid profile. However, the commercial beverage in this study presents a high concentration of glucose syrup, which could be responsible to the hypertriacylglycerolemia found in TBA animals. Although açaí shows a well described has its anti-inflammatory role, our results suggest that when it is consumed in beverages with a high content of carbohydrate, its effects may be abolished.

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PULMONARY MALIGNANCIES TREATED WITH PERCUTANEOUS MICROWAVE ABLATION (MWA)

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Objective: To retrospectively evaluate the effectiveness, safety and follow up imaging features of microwave ablation in 32 patients with pulmonary malignancies.
Materials and methods: From February 2009 to December 2010, 32 patients (22 men, 10 women; age range 18–85 years) were submitted for percutaneous microwave ablation sessions. Tumor size >3 cm.
Fifty one procedures were performed. Patients were administered lexotanil 3 mg per os and zideron 75 mg IM, 45 minutes before each session. The procedure was performed under local anesthesia (2% Lidocaine). Optimal approach was determined based on the location of the tumor, and tumors were targeted under CT-guidance. A thin (14.5 G) microwave antenna was placed directly into the tumor. Duration of each session ranged between 3–12 minutes. Follow-up contrast enhanced CT scans were obtained at 1, 3, 6 months, 1 year and 18 months.
Results: Follow up scans revealed lack of contrast media enhancement in 15 patients (46%), whereas partial enhancement was seen in 17 patients (54%), who all underwent a second session and two even a third session. No major complications, such as acute pulmonary bleeding, large pneumothorax, pulmonary embolism, excessive necrosis or death, occurred. No significant worsening in pulmonary function occurred. Post-ablation syndrome was reported in 7 patients (21.9%). Minor complications occurred in a minority of patients; productive cough in 4 patients (12.6%), small pleural effusions in 2 patients (6.3%). Small pneumothorax occurred in 3 patients (9.4%) and was self limited.
Conclusion: Microwave ablation is effective and may be safely applied to lung tumors.

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LONG-TERM L-CARNITINE SUPPLEMENTATION PREVENTS DISRUPTION OF LIVER LIPID METABOLISM IN CANCER CACHEXIA

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Objectives: Cachexia is a chronic inflammatory syndrome, characterised by weight loss and abnormalities in intermediary metabolism, including disruption of liver lipid metabolism. L-carnitine is required for the transport of long-chain fatty acids (LCFA) into the mitochondria, and cachectic patients present decreased plasma carnitine concentration. L-carnitine supplementation is adopted in the treatment of many diseases, and we sought to examine whether cachectic rats would benefit from this strategy.
Methods: Rats were inoculated with the Walker 256 carcinosarcoma and divided into 3 groups: supplemented with L-carnitine (1 g/kg) for 28 days - C28, supplemented with L-carnitine for 14 days - C14 and control (receiving saline) -TB. Non-tumour-bearing rats were a control group (CTR). Liver and plasma triacylglycerol, liver mRNA expression (real-time PCR) of carnitine palmitoyltransferase I and II (CPT I and II), microsomal triglyceride transfer protein (MTP), fatty acid-binding

protein (L-FABP), fatty acid translocase (FAT/CD36) and peroxisome proliferator-activated receptor -alpha (PPARα), and the maximal activity (radioassay) of CPT I and II, were evaluated.

Results: Gene expression of MTP and CPT I activity were reduced in TB (6%, $p<0.05$, and 42%, $p<0.01$, respectively). TB also showed increased ($p<0.01$) liver and plasma triacylglycerol content in relation to CTR. Long-term supplementation (C28 group) restored mitochondrial LCFA oxidation and VLDL assembly capacity, suppressing cachexia-related hypertriglyceridemia and steatosis. On C14 group there was restoration of MTP gene expression, but it was not enough to prevent the higher liver triacylglycerol content.

Conclusion: The results indicate that long-term L-carnitine supplementation improves liver lipid metabolism in cachexia.

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RADIOFREQUENCY ABLATION (RFA) IN PATIENTS WITH METASTASES AFTER SURGICAL LUNG CANCER RESECTION

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Objective: To prove the efficacy and safety of RFA of patients with surgically resected lung cancer who presented with metastases.

Material and methods:
in our institution we performed 115 RFA sessions in 86 patients
18 patients underwent 18 RFA sessions for painful bone metastasis.
22 patients with 35 liver metastases underwent 42 sessions
25 patients with adrenal metastases underwent 30 sessions
5 patients with intraperitoneal metastases underwent 7 sessions
16 patients with intrapulmonary metastases underwent 18 sessions
Metastases with partial response and those with local recurrence post RFA underwent a second RFA session.

Results:
Liver metastases:
31/35 (88.6%) of the lesions showed complete necrosis and 4/35 metastases showed partial response (11.4%).
3/35 (8.6%) lesions showed local recurrence.
Adrenal metastases
22/25 (88%) of the lesions showed complete necrosis and 3/25 (12%) showed partial response. 2 lesions (8%) showed recurrence.
Intraperitoneal metastases
3/5 (60%) of the lesions showed complete necrosis and 2/5 (40%) showed partial response.
Intrapulmonary metastases
14/16 (87.5%) of the lesions showed complete necrosis and 2/16 (12.5%) showed partial response.
No major complications occurred: A pneumothorax occurred in 3/18 cases of intrapulmonary metastases and was treated conservatively. Symptoms of post ablation syndrome were present after 38/115 RFA sessions (33%).

Conclusion: RFA of metastases in patients with surgically resected lung cancer seems to be efficient and safe treatment modality.

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HOPE THROUGH SHIFTING MINDSETS: FINDING INWARD STRENGTH, MAKING LIVING WITH CANCER POSSIBLE

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This study explored the effect of spiritual, emotional and psychosocial support within a rehabilitative care approach in relation to three distressing cancer symptoms; pain, dyspnoea and fatigue.

A phenomenological orientated psychological approach was used in a cohort with a median age of 66 years to answer two related questions: 'What is the phenomenon that is experienced and lived?' and 'how does it show itself?' Semi-structured interviews of the participants were transcribed and significant statements were extracted using Colaizzi (1978) methodology. Key themes, which form the basis of the findings, were then derived from the data by categorising words, statements, and phrases according to their similarities and characteristics. The remaining significant statements became the raw data for analysis. The relevance and benefits of the spiritual, emotional and psychosocial support were then identified using quality of life markers established during the data analysis.

The research findings uncovered a relationship between quality of life and rehabilitation where the rehabilitative care approach was perceived to improve quality of life by giving the participant some sense of purpose and that it provided a reason to live instead of just existing.

This research indicates that the role of the health care professionals in palliative care is to provide hope for individuals facing cancer. Hope in this context is the ability to equip the person with the knowledge that they can achieve more than they thought they could through the use

of a variety of therapies and communication skills and so enhance the individual's quality of life.

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LIVER MALIGNANCIES TREATED USING PERCUTANEOUS MICROWAVE ABLATION (MWA)

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Objective: To retrospectively evaluate the effectiveness and safety of microwave ablation in patients with liver malignancies.
Materials and methods: From August 2009 to August 2010, 38 patients (25 men, 13 women; 18–83 years old) we performed 46 percutaneous microwave ablation sessions: 29 patients had HCC, 17 patients had metastatic liver disease. All treated tumors were larger than 3 cm.
Patients were administered lexotanil 3 mg per os and zideron 75 mg IM, 45 minutes before each session. The procedure was performed under local anesthesia with injection of 2% Lidocaine. Optimal approach was determined based on the location of the tumor, and tumors were targeted under CT-guidance. A thin (14, 5 G) microwave antenna was placed directly into the tumor. Duration of each session ranged between 9–12 minutes. Follow-up contrast material-enhanced CT scans were obtained at 1, 3, 6 months and 12 months.
Results: Follow up contrast media-enhanced CT scans revealed lack of contrast media enhancement (78,9%) in 30 patients, whereas partially decreased enhancement was seen in 8 patients (21,1%), who underwent a second session. No major complications occurred. Post-ablation syndrome was reported in 9/38 patients (23, 7%).
Conclusion: Microwave ablation is effective and may be safely applied to liver tumors.

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PALLIATIVE CARES FOR SYMPTOM CLUSTERS AND CLINICAL OUTCOMES IN HOSPICE CANCER PATIENTS

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Background: Despite the progression in symptomatic care for cancer patients, they are still suffering from multiple discomfort problems. We tried to indentify the clusters of symptoms need to manage with palliative procedures, and describe how the managements impact on the clinical course.
Methods: Patients admitted in hospice ward were evaluated at St. Vincent's Hospital from August to December 2010. The symptoms from the patients were measured by the M.D. Anderson symptom inventory(MDASI), palliative procedures were recorded prospectively and the clinical outcomes were analyzed.
Results: Of the 86 patients, 51 were male (59%), 35 were female (41%), median age was 65 years (range 36~86). Five clusters were identified: 1. Pain 2. Respiratory(dyspnea, hoarseness, pleural and pericardial effusion), 3. Fatigue(weakness, anorexia), 4. Digestive (dysphagia, ascites, constipation, ileus), 5. Neuropsychological(confusion, anxiety). The median severity score were 8.6 in Pain, 7.4 in Respiratory, 6.7 in Fatigue, 7.5 in Digestive, 8.2 in Neuropsychological. The major palliative procedures in Pain were opioids (40, 46.5%), radiations(7, 8.2%), in Respiratory were oxygen supplement(14, 16.3%), pleural effusion drainage(4, 4.6%), in Fatigue was hydration(5, 5.8%), in Digestive were tube feeding(3, 3.5%), ascites tap(3, 3.5%), Levin-tube(4, 4.6%), and 6(7.0%) with palliative sedation in Neuropsychological. The clusters associated with poor prognosis with survivals(days) were Neuropsychological(2~17, median:5), Respiratory(5~61, median:14), Fatigue(8~21, median:15) followed by Digestive(4~58, median:18), Pain(2~present, median:22).
Conclusion: Pain cluster with active symptomatic procedures may improve clinical result on survival in hospice ward. To assess symptoms and proper palliative procedure is important to relief distress and quality of life in advanced cacner patients.

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PATHOGENS CAUSING SEPSIS IN PEDIATRIC CANCER PATIENTS PRESENTING WITH FEBRILE NEUTROPENIA: SPECTRUM AND SUSCEPTIBILITY PATTERNS

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Objectives: Infections are a major cause of morbidity and mortality in pediatric cancer patients. The introduction of empirical and prophylactic antibiotics has reduced the occurrence of infectious complications considerably, but has also been the most important determinant in causing a shift in the etiology of bacteremias from gram-negative to gram-positive organisms in the last few decades. The aim of this study was to map out the microbiological spectrum and

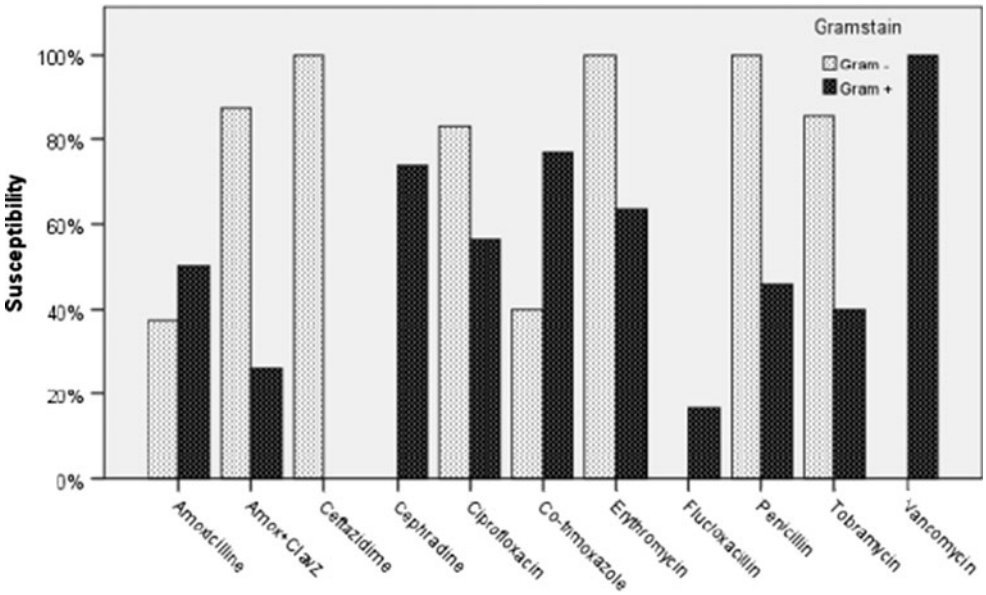
susceptibility patterns of pathogens causing sepsis in the past five years.

Methods: We analyzed the blood cultures of pediatric cancer patients presenting with febrile neutropenia (FN) between 2005 and 2010. Information on isolated strains including etiology and susceptibility to antibiotics was obtained using standard microbiological procedures.

Results: A total of 224 FN episodes occurred in 204 pediatric cancer patients. Overall, 68 organisms were isolated in 53 FN episodes (23.7%): Gram-positive bacteria 52/68 (76.5%), Gram-negative bacteria 15/68 (22%), fungal infection 1/71 (1.5%). Figure 1 shows the resistance patterns of empirical and prophylactic antibiotic regimens.

Complications (including admission at the ICU) occurred in 15.4% of Gram-positive bacteremias, and in 20.0% of Gram-negative bacteremias.

Conclusions: Our results show that currently over 75% of sepses in pediatric cancer patients with FN is caused by Gram-positive bacteria in the Netherlands. In our population, ceftazidime is a good choice for covering Gram-negative bacteria; vancomycin the best choice for Gram-positive bacteria. Therapeutic strategies for febrile neutropenia should be modified based on the local antibiotic resistance patterns.



[Figure 1]

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CANCER RELATED FATIGUE: A CHALLENGING PROBLEM FOR THE ONCOLOGIST

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Objectives: Development guideline for management of fatigue.

Methods: A multidisciplinary team including, medical oncologists, psychologists, nurses and professionals involved in Physical Activity, was created to elaborate consensual guidelines for the treatment of Cancer related fatigue (CRF), regarding recent literature published. All modalities of treatment were analyzed. The results are presented during the National Day Care Support organized by AFSOS[1].

Results: A rest must not usually be recommended.

Home working (and sometimes professional work) can be continued; the work must be organized over the week.

Except the anemia treatment, no drug has proved a statistical benefit. Antidepressants do not benefit in the absence of depression.

Correction of a nutritional deficiency and treatment of pain are a major aspects of the problem. The psychological evaluation appears to be essential in high CRF.

Physical rehabilitation appears to be the key point of CRF treatment. Aerobic activity with a progressive program adapted, according to patient capacities and preferences are recommended. Group work is usually preferable.

The physical teacher must be formed in oncology for monitoring patients according of their physical and medical status. Physical activity must be practiced 3–5 times per week with a median duration of 20 to 50 minutes, progressively obtained.

Conclusions: Although many ways exist to treat CRF, physical rehabilitation appears to be the most relevant approach. The next step of our work will be to give the opportunity to every fatigued patient to practice physical activity with a wellformed teacher everywhere in France.

[1] French Association for Cancer Care Support

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ONCOCOMPASS: DEVELOPING AN E-HEALTH MANAGEMENT PLATFORM TO FACILITATE AND INNOVATE SUPPORTIVE CANCER CARE

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Objectives: To develop OncoCompass, a personal e-health portal that supports cancer survivors by finding and obtaining optimal supportive care, adjusted to their personal health status and situation.

Methods: OncoCompass is based on PreventionCompass: an e-health portal which facilitates direct-to-user delivery of individualized preventive healthcare. We adapted this generic model for cancer survivors based on the Dutch national guidelines "Cancer Rehabilitation" and "Screening for the need for psychosocial care". The basic assumption in developing OncoCompass was to implement the most recent scientific insights as obtained from literature reviews. Quality of life and lifestyle domains incorporated in OncoCompass were reviewed by a multidisciplinary oncology team and experts in the field of cancer rehabilitation and supportive care.

Results: By means of OncoCompass patients can independently fill in questionnaires on quality of life (physical, psychological, social, and spiritual domains) and lifestyle. Data are processed in real-time. Patients can view the results by means of a well-being profile. Supported by an evidence based knowledge and decision support algorithm, advices are generated automatically concerning supportive care and lifestyle. Based on the individual well-being profiles and patients' preferences, participants can be directed towards guided self-help treatments or professional care providers (intervention mapping).

Conclusions: OncoCompass can be used as a helpful tool in careful monitoring quality of life and outcome and has the potential to deliver supportive care in a structured, comprehensive and cost-effective manner. To evaluate the usability, feasibility and (cost-)effectiveness of OncoCompass we will conduct a multi-centre pilot study among cancer survivors.

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PATTERNS OF PRACTICE OF MEDICAL ONCOLOGIST WITH REGARD TO ASSESSMENT AND MANAGEMENT OF DEPRESSION

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Background: Depression is a common psychiatric illness in patients with cancer and it is known to reduce quality of life. Many depressed patients in oncology are not treated due to the difficulty in assessment.

The aim of this study was to assess oncologist's decision making strategy for depression's management.

Methods: It is a multicentre prospective study. All the oncologist of three cancer center where included; they were asked to sort 22 symptoms by importance for depression's diagnosis (important symptoms, important but not specific in oncology and marginal) and after they were interviewed.

Results: 34 physicians participated with 29 oncologists (participation rate of 100%). The physicians' ranking of depressive symptoms is heterogeneous, with a low rate of physicians (<5%) using a screening tool. We found a strong agreement (>75%) on several symptoms: suicidal ideation, loss of pleasure, sleep disorders, hopelessness, personal depression history and moderate agreement (>50%) for fatigue, impact on daily life, sadness, anxiety. They were mainly (83%) favorable to a systematic screening procedure despite the lack of time they underline. From the 34 physicians interviewed, data analysis revealed 4 dominant themes related to depression:

- Request for hastened death and refusal of care
- Violent representation of suicide and the taboo associated with suicidal situation
- Specific depressive symptoms in oncology
- Non specific symptoms: Depression or cancer (fatigue, anorexia)

Conclusions: Depression's management is reported as difficult and often requires multidisciplinary intervention. We hope that theses results will help up us to propose new strategies (like systematic screening).

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IMPLEMENTATION OF EARLY GOAL DIRECTED THERAPY IN THE EMERGENCY CENTER AT A CANCER INSTITUTION

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Objectives: The purpose of this investigation is to evaluate the impact of a standardized sepsis order set and algorithm to improve compliance with Early Goal Directed Therapy (EGDT) on 28-day in-hospital mortality.
Methods: Single-center, prospective interventional study with a historical control conducted in the emergency center. Patients identified as having severe sepsis or septic shock between June 1, 2007 and September 6, 2010 will be reviewed for inclusion into the trial. A standardized order set and algorithm along with provider education was implemented on March 1, 2010. The primary outcome will be 28-day in-hospital mortality. Secondary outcomes include:
1) measurement of lactic acid,
2) measurement of urine output,
3) adequacy of empiric antibiotic therapy,
4) timing of initial antibiotic therapy,
5) ICU length of stay, and
6) overall hospital length of stay.
Results: The before and after implementation groups contained 102 and 112 patients respectively. The 28-day mortality dropped from 39% to 26% (p=0.037). Time to measurement of lactic acid dropped from 10.36 hours to 6.34 hours. Measurement of urine output increased from 34% to 50%. Adequacy of initial antibiotic therapy increased from 64% to 70%. Average time to first antibiotic increased from 1.2 hours to 1.3 hours. ICU length of stay decreased from 5.35 days to 3.47 days and total hospital length of stay decreased from 13.34 days to 11.92 days.
Conclusions: Implementation of a standardized sepsis order set and algorithm to improve compliance with EGDT in a cancer patient population improved mortality and length of stay.

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SUPERCRITICAL FLUID EXTRACTION OF *CORDIA VERBENACEA* D.C. IMPROVES ANTITUMOR ACTIVITY

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The present study aims to provide a comparative evaluation of antitumor activity of supercritical (SFE) and conventional (CE) *Cordia verbenacea* D.C. extracts. CE was obtained using classical organic solvent extraction (CE) with ethanol and SFE using carbon dioxide (CO_2) at 300 bar, 50°C and solvent flow rate of 0.3 kg/h. Both extracts were screened against the Ehrlich Ascite Carcinoma (EAC) and MCF-7 cell line by cytotoxicity (MTT assay), [^{3}H] Thymidine DNA uptake (cell proliferation assay) and differential staining of ethidium bromide/orange acridine (apoptosis assay). The expression of COX-2 was evaluated by through *Western blotting* in MCF-7 cells. The determination of antitumor activity was performed in male Balb/c isogenic mice inoculated with EAC. The results was showed that SFE and CE reduced the viability (IC_{50}=133 and 198 μg/mL to MCF-7 and 177 and 154 μg/mL to EAC) and proliferation (43 and 52% of [^{3}H]Thymidine uptake in CE and SFE, respectively) cells. The staining with EB/OA was showed that the most probable type of cell death is apoptosis. SFE was able to reduce the expression of COX-2 in MCF-7 cells (25% of reduction). *In vivo* SFE treatment was decreased tumor volume, the body weight and the packed cell volume and mean survival time (MST=23% to 150 mg/kg. Therefore, the high pressure extraction method to enhance cytotoxicity and antitumor activity of *C. verbenacea* extracts and a possible mechanism of antitumor action could be the inhibition of COX-2, which could lead to a blockage of cell survival and induction of apoptosis.

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THE ROLE OF RELIGIOUS PRACTICES: A STYDY OF THE LIVED EXPERIENCES OF FAMILY CAREGIVERS OF TERMINALLY ILL CANCER PATIENTS

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Introduction: Religious and general spiritual issues are the focus of new clinical practice and research in cancer and supportive care. However the subject of religious practices and the possible influence of these practices in Greek Family caregivers of terminally ill cancer patients have been widely ignored.
Aims and objectives: To gain understanding of the role of religious practices amongst Greek family caregivers of terminally ill cancer patients. To explore their religious practices and also the role of these practices when dealing with the terminal stage of the relatives' lives.
Design: A qualitative approach, using a hermeneutic phnomenological methodology.

Sample: A purpose sample of Greek family caregivers of terminally ill cancer patients.
Methods of data collection: Semi-structured interviews.
Results: The role of religion generally was important in caregiver's life. Regarding religious practices, family caregivers used various practices, such as prayer, attending mass, charity and alms. These practices helped them to communicate with God and at the same time strengthen their relation with him.
In this study prayer was reported by many caregivers as the most usual and most basic practice.
Conclusion: In the cancer care context family caregivers should be viewed not only as supporters of terminally ill cancer patients but also as people who have spiritual needs of their own. Religious practices are critical coping strategies for family caregivers and emphasis should be given by health professionals to the religious and spiritual concerns of caregivers.

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SURVIVORSHIP IN OLDER CANCER PATIENTS: OLDER CANCER PATIENTS REPORT ON EXERCISE AND SIDE EFFECTS DURING AND AFTER CANCER TREATMENT

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The numbers of older (≥65 yrs) and oldest old (≥80 yrs) cancer patients are increasing. Older patients often sustain side effects and functional deficits from treatments, which exercise may improve.
Objectives: We report on exercise participation during and after treatment and identify associations between exercise, side effects and self-rated health (SRH).
Methods: 417 newly diagnosed older cancer patients (mean age=73; N=47≥80 yrs), receiving chemotherapy and/or radiation, participated. Patients reported on exercise participation (yes/no), side effects (12 side effects; 0–10 scale; 10 = worst), and SRH (1–5 scale; 1 = excellent) during and in the 6-months after treatment.
Results: 46% and 41% of older and oldest old patients, respectively, reported exercising during treatment. 60% and 68% of older and oldest old patients, respectively, reported exercising after treatment. ANOVAs revealed that older patients who exercised during treatment reported significantly less weight loss (exercise = 1.43, no exercise = 2.01), shortness of breath (exercise = 1.96, no exercise = 2.84), and better SRH (exercise = 2.37, no exercise = 2.88) during treatment. Older patients who exercised during treatment reported less shortness of breath (exercise = 1.34, no exercise = 2.14) and better SRH (exercise = 2.44, no exercise = 2.85) after treatment. The oldest old patients who exercised during treatment reported less concentration difficulties (exercise = 1.20, no exercise = 3.05) and memory problems (exercise = 1.67, no exercise = 4.14) during treatment. The oldest old who exercised after treatment reported less nausea (exercise = 0.19, no exercise = 1.60), fatigue (exercise = 3.14, no exercise = 5.90), and total side effects (exercise = 15.14, no exercise = 30.10) after treatment. All $p \leq 0.05$.
Conclusions: Approximately half of older cancer patients report exercising during and after treatments. Exercise may reduce side effects in older patients.

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ANXIETY AND DEPRESSION IN OUTPATIENTS TREATED WITH ORAL PALLIATIVE CHEMOTHERAPY

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Background: The majority of recently introduced anticancer drugs are orally delivered to outpatients. The goal of our study was to evaluate the anxiety and depression state of these patients in order to understand possible relationship between psychological status and attitude to accomplish oral oncological therapies.
In this report we focalize our attention to the psychosocial status of these patients.
Methods: To evaluate psychological status of our patients we asked them to complete the Hospital Anxiety and Depression Scale Test (Zigmond, 1983). Written informed consent was mandatory. Questionnaire was drawn up by a staff composed of oncologist, nurse and psycho-oncologist. Compliance to oral therapies was evaluated independently.
Results: From 10/2008 to 04/2009 74 patients entered the study. Eligible patients were 44 males and 30 females, median age was 69 and median PS was 0. All pts received a palliative oral treatment. Most frequent tumours were: gist 21, colorectal 15, kidney 13, breast 10. 29 pts received Capecitabine, 28 Imatinib, 13 Sunitinib, 4 Sorafenib. HADS Test identified 24 pts (32.4%) with a moderate or heavy anxious status and 9 (12.2%) with a moderate depressive condition. There were no relationship between psychological status and sex, age, Performance Status, social characteristics such as school and marital status, number of pills to intake. Symptoms were present in 29 patients (39.2%), mostly pain (77%). Presence of symph-

toms was not related neither with anxiety (p 0.4) nor with depression (p 0.5).
Discussion: Outpatients treated with palliative oral chemotherapy develop frequently a mild to heavy anxiety status.

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SYMPTOM CLUSTERS IN PATIENTS WITH ADVANCED CANCER - A REANALYSIS COMPARING DIFFERENT STATISTICAL METHODS

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Purpose: To investigate whether symptom clusters identified were consistent using different statistical methods.
Methods: Reanalysis of existing data set composed of 1296 patients with advanced cancer was performed using hierarchical cluster analysis (HCA) and exploratory factor analysis (EFA) to extract symptom clusters. Findings were compared along with results obtained using principal component analysis (PCA) in the original study.
Results: HCA and PCA yielded matching solutions consisting of three separate symptom clusters. EFA only suggested a two symptom cluster solution. The anxiety and depression cluster was retained in all there statistical analyses while the other symptoms were grouped into a single cluster in EFA rather than split into two separate clusters.
Conclusion: Symptom cluster analysis varies depending on which statistical method is employed. A key step in achieving consistency in symptom cluster research involves the utilization of a common statistical analysis method. Further research is warranted to determine the best analytical method that should be employed to provide the most clinical relevance.

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ETHICAL ISSUES IN ADULT LEUKEMIA: FROM PATIENTS' AND PHYSICIANS' PERSPECTIVE

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Objectives: To determine and to compare expectations-experiences of adult leukemia patients and their physicians in terms of patient-physician relationship and medical ethics.
Methods: The study was conducted among 50 physicians, 106 leukemia patients using interviews with direct observations and evaluated with a case-study method. Patients were asked to tell about their feelings-experiences after getting their medical histories. Physicians were asked to tell about difficulties of their experiences with patients at the time of diagnosis and treatment. Elected cases are analyzed in accordance with principles of medical ethics.
Results: Patients' problems are basically centered on affecting uncertainty due to illness experience, necessity of psychosocial support, changing of daily life and quality of patient-physician relationship. Form of the illness, nature of the treatment and side effects, necessity of palliative care, difficulty in decision-making, cope with patient's reaction can be counted among the stress factors peculiar to the physicians working with leukemia patients.
Conclusions: Meeting patients' expectations by the physician are required for actualization of beneficence and nonmaleficence principles in medical applications. Regarding to the right of informing/not to inform, analyzing expectations and values of patients are necessary in the context of respect for patient's autonomy. Physicians have to focus on illness more than patient because of hard working conditions. Allocation enough time is required for listening to patient and to analyzing their expectations in order to benefit. Relationship between adult leukemia patients and their physicians has an ethical aspect in terms of basic principles beneficence-nonmaleficence-autonomy-justice. Problems regarding to applicability of ethical principles affect patient-physician relationship.

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THE RELATIONSHIP BETWEEN TREATMENT PATTERNS AND PSYCHOLOGICAL CHARACTERISTICS IN CANCER PATIENTS - FOCUSED ON EMOTIONAL DISTRESS, ANXIETY, AND DEPRESSION

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Objectives: Screening for emotional distress is becoming increasingly common in cancer care. Psychosocial aspect of patient care is becoming paramount in the palliative care. This study aimed to identify predictors of distress, anxiety, depression among demographic and illness characteristics in terminally ill cancer patients.
Methods: We used a prospective cross-sectional study design. A consecutive sample of 132 patients from five palliative care centers in Daegu was evaluated. The procedure of gathering data included the consent of patients and the application of Brief Pain Inventory (BPI), the

Distress Thermometer/Problem List (DT/PL), the Sheehan Disability Scale (SDS), and the Hospital Anxiety and Depression Scale (HADS).

Results: Age of patients was between 23 and 81 yrs (median=59.5 yrs). Sixty six patients (60%) had moderate to severe distress defined as 4 or more on DT. Thirty seven percents of patients had anxiety and 55.7% had depressive mood. Statistically significant correlations were found for distress and age. Older patients (age over than 60 yrs) have more depressive symptom than younger patients (20–40 yrs) (p=0.019). Patients who taken just single therapy had more anxiety symptom than whom taken multiple therapy (p=0.054). Patients who taken chemotherapy or radiation therapy had less depressive symptom and distress than whom not taken any therapy. Marital status, sex, religion, medical insurance status, occupation, alcohol ingestion and smoking had no relationship with illness characteristics. In multivariate analyses, any factor was not associated with prevalence of distress.

Conclusions: Only age over 60 years was significantly associated with higher prevalence of depression.

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SEXUAL DYSFUNCTION NEGATIVELY IMPACTS QUALITY OF LIFE IN WOMEN WITH BREAST CANCER

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Background: Sexual dysfunction is reported after chemotherapy and endocrine therapies, and causes a substantial burden on breast cancer patients and survivors. However, the prevalence and severity of sexual dysfunction is not well defined.

Aim: Determine prevalence, severity and impact of breast cancer treatment on sexual health.

Methods: A survey that includes the validated Female Sexual Function Index (FSFI), a measure of health-related quality of life (EuroQol EQ-5D), and disease-specific items to characterize sexual dysfunction was anonymously administered in outpatient breast clinic waiting areas at MSKCC, under an IRB waiver of consent.

Results: November 2008 to May 2009, 509 women with breast cancer were each queried once. The mean age was 51 (range 26–91). 87% reported receiving hormonal treatment and 82% chemotherapy (76% adjuvant; 24% metastatic disease). 76% reported sexual dysfunction attributed to breast cancer or its treatment, defined as an FSFI score <26.55. Among these women, 79% considered their sexual symptoms to be bothersome, with 51% noting moderate/severe levels of bother (score <5/10). Metastatic disease, development of amenorrhea from cancer treatment, single marital status, postmenopausal, antidepressant use and poorer overall health were each significantly associated with worse FSFI scores. Lower FSFI scores were significantly associated with worse health-related quality of life.

Conclusion: Sexual dysfunction is prevalent in women treated for breast cancer and should be discussed with patients as a potential adverse effect of therapy. Assessment of sexual symptoms throughout treatment and survivorship is essential to facilitate the use of potential interventions and ultimately improve quality of life.

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PHYSICIANS' PRESCRIBING HABITS FOR CANCER PAIN IN CYPRUS

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Aims: To examine physicians' prescribing habits for cancer pain both within and outside the Bank of Cyprus Oncology Centre (BOCOC) in Cyprus.

Methods: Study I: A cross-sectional study of 141 cancer outpatients receiving chemotherapy within the BOCOC, using the Brief Pain Inventory (BPI) to measure the presence, severity of pain and prescription of analgesia. Study II: A retrospective study of 50 new Lung Cancer patients referred to one Oncologist in the BOCOC, examining the prescribing habits of physicians outside the oncology centre.

Results: In Study I, whilst 82% of patients had pain, only 47.5% were prescribed analgesia. 37.6% were prescribed paracetamol and non steroidal anti-inflammatory drugs, 1.4% weak opioids and 7.1% strong opioids. Of concern was that out of the 8 patients with severe pain, 7 (87.5%) were either on the first step of the WHO ladder or not receiving any analgesia at all. In Study II, only 14 patients (28%) out of the 28 (56%) who complained of pain had been prescribed any analgesia, and only 3 (6%) had been prescribed strong opiates prior to their oncology appointment. Following their oncology appointment, 44% of patients were prescribed analgesia, 20% being strong opiates.

Conclusions: There is undertreatment of pain in cancer patients in Cyprus, both within and outside a tertiary Oncology centre, especially with regard to the underuse of strong opioids. There is a need to look further into physicians' prescribing habits and training, as well as to patients' attitudes towards analgesia and opioids.

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RESISTANCE EXERCISE MODULATES TESTOTERONE LEVELS IN TUMOUR BEARING RATS

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Introduction: Hypogonedism is a frequent symptom of cancer patients and the decrease in testosterone may aggravate muscle mass loss. Exercise is a simple, low-risk intervention and is associated with positive effects on lean mass.
Aim: We carried out a study to assess the effects of an resistance exercise program on walker 256 tumour bearing rats testosterone profile.
Methods: Forty rats were randomly assigned to 1 of the 3 experimental groups: control (C), tumour-bearing (TB), Resistance Training (RT) and tumour-bearing RT (RTTB). During the 8 weeks of resistance training, climbing sessions were performed once every 3 days. Training sessions consisted of 3 ladder climbs, with 75%, 90%, and 100% of their maximal carrying capacity, determined in the previous session. At the sixth week of resistance training, tumour cells were inoculated in tumour groups subcutaneously in the right flank with a sterile suspension of 2×10^7 Walker 256 tumour cells. Plasma testosterone was determined with a commercial radio assay kit and expressed in ng/ml.
Results: Testosterone levels were higher 55% ($p<0,042$) in RTTB group when compared with CT group and 63% ($p<0,03$) compared with TB group.
Conclusions: The resistance exercise protocol showed a marked effect effects on testosterone profile in the plasma of tumour bearing rats, preserving muscle protein

Parameters	Control	TB	RT	RTTB
Testosterone (ng/ml)	254+41.3	221+23.1	734+88.2a,b	577+131a,b
Gastrocnemius Protein (ug/ul)	4.7+0.1	4.5+0.08	5.9+0.03b	5.1+0.3

[Table1: Hormone and muscle protein profile]

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INCIDENCE AND SPECIFICITIES OF VENOUS THROMBOEMBOLISM IN ONCOLOGY

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Background: Venous thromboembolism (VTE) is a usual complication in oncology (20%). This study's aim is to analyse specific clinico-biological parameters of cancer patients who present a VTE.
Method: Data has been collected from patient dossiers wich presented VTE. The study is a retrospective analysis of patients with cancer who consulted the emergency oncology department in 2009.
Results: 79 VTE were analyzed (46% of men; median age of 61 years), with 35 Pulmonary embolism (PE), 47 deep-vein thrombosis (DVT), and 6 central venous catheter thrombosis (CVT).
The most frequent tumoral localizations are: lung (25%), breast (18%), colorectal (14%), and 70% of VTE have one or several metastatic sites.
22% of them have a VTE antecedent.
The median of tumoral evolution before the VTE is 16 months.
77% of cases had an antitumorous treatment, out of which 77% were treated with chemotherapy, 28% with targeted therapy and 12% hormonal therapy.
Death rate is 62%.
The average weight is 70 kg and the average Body Mass Index (BMI) is 24 kg/m² (12% have a BMI<18,5, 54% in between 18,5 and 25 and 34%>25).
Concerning the biological parameters, the average values are: Hb at 11 g/dl, Platelets at 255546/mm3, CRP at 90 mg/l, LDH at 399 UI/l.
Conclusion: The VTE incidence at oncology specialised emergency is 16 for 1000 patients. The VTE risk factors research needs a comparative study with a paired pilot group. Results will be presented at the meeting.

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NO SIGNIFICANT RISK OF EPISTAXIS AND THE USE OF FENTANYL PECTIN NASAL SPRAY (FPNS)

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Objectives: Fentanyl pectin nasal spray (FPNS) is a novel method to treat breakthrough cancer pain (BTCP). FPNS has demonstrated rapid, well-tolerated pain relief in a broad range of patients. However, epistaxis remains a practical concern for nasally administered agents. As such, the correlation between epistaxis incidence and FPNS use was evaluated.

Methods: The FPNS phase 3 clinical programme consisted of 500 treated patients who experienced 1–4 BTCP episodes/day while taking ≥60 mg/day oral morphine (or equivalent) for background pain. Nasally related safety data were collected throughout the programme and were analysed for their correlation with FPNS.

Results: From 45,599 FPNS-treated BTCP episodes, 21 epistaxis events in 15 (3%) patients were reported. Nine events were considered 'possibly related' and one was considered 'probably related' to FPNS; all were mild, and none required treatment. One event was severe but was not FPNS related. Drugs known to affect coagulation were used in 10 of 15 patients; none had adverse findings on clinical nasal examination.

Table. FPNS-Related Epistaxis Events

Patient	FPNS (μg)	FPNS Use (days)	Platelet Count ($\times 10^3/mm^3$)	Concomitant Drugs	Further FPNS Use (days)
A*	800	23	191	NSAID	118
B	800	17	128	Neupogen®	19
C	200	2	249	ASA, warfarin	149
	400	4			147
	800	11			140
D	400	2	202	NSAID	17
E	100	6	285	–	4
F	100	33	337	NSAID, ASA, warfarin	88
G	800	16	169	NSAID	8
	800	26			–

*Event was considered 'probably related' to FPNS.
[Table]

Conclusions: The use of FPNS was not associated with an increased risk of epistaxis. Additionally, epistaxis appeared not to impact the usefulness of FPNS in the management of BTCP.

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SALIVARY GLAND FUNCTION OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS

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Objectives: The purpose of this study is to evaluate salivary flow rates (SFR) according to the National Institute of Health (NIH) GVHD classification, in a population of allogeneic hematopoietic stem cell transplant (alHSCT) recipients.

Methods: Oral evaluation was conducted in alHSCT patients from the Hospital of Federal University of Rio de Janeiro, from January 2008 to January 2010. Patients would be excluded if not willing to participate. Patients characteristics were assessed from medical records. Moisture perception was measured through visual analogue scale (VAS), and xerostomia was considered when >2 cm. Resting SFR was used for assessment of salivary function. A descriptive analysis was performed and T test was used for comparison between SFR of GVHD statuses.

Results: All 39 alHSCT recipients were included in study. No patients had either classic acute GVHD, or persistent, recurrent or late acute GVHD. There were 20 (51.3%) patients with classic chronic GVHD. Nine of these patients were under GVHD prophylaxis. Fifty per cent of them presented xerostomia. Mean SFR was 0.23 ml/min (range 0–0.68). Among the four (10.3%) patients with overlap

syndrome. There were 50% of them presenting xerostomia and the mean SFR was 0.67 ml/min (range 0.06–1.4). Fifteen patients did not develop GVHD after alHSCT. Mean SFR was 0.52 ml/min (range 0.12–1.4) and none of them complained of dry mouth. The SFR of chronic GVHD patients were lower than alHSCT recipients that did not develop GVHD (p=0.24).

Conclusions: Salivary flow rates were reduced in patients with chronic GVHD, when compared to other alHSCT recipients.

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CCF AS A SUPPORT CARE SYSTEM TO MAKE EXCELLENT PEDIATRIC CANCER CARE POSSIBLE IN TAIWAN

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Objectives: The purpose of this paper is to explore the importance of Childhood Cancer Foundation (CCF) as a supportive care system to cancer children and their families in Taiwan.

Methods: Data were analyzed from CCF according to the annual report.

Results: Cancer is the second leading cause of death in childhood in Taiwan. There are 550 to 600 new cases each year. The study on "The impact of childhood cancer on Chinese families" was done in 1981, four major problems were found to be solved in caring: expensive medical expenditure, lack of well-established health care delivery system, lack of unique therapeutic regimen, inappropriate hospice care at terminal stage. Hence, CCF was established in 1982 donated by public charity. The supportive care of CCF included: establishing a data base, providing financial assistance, facilitating continuity care, providing parent's meeting, publishing quarterly newsletter, providing nurses' training programs, providing public and family education, establishing a health care delivery network, initiating research in both medicine and nursing care and fund-raising. In past 30 years, 14743 cancer children and their families have received supportive care from CCF.

Conclusions: It is believed that when the government is not yet fully prepared to initiate a more comprehensive health-care programme, a collective effort from professionals as well as a charity minded public can play an important supportive care system to make excellent cancer care possible. The nursing profession is particularly proud of its role as an agent of change.

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PHASE 2/3 STUDY OF SOTATERCEPT AN ACTIVIN A INHIBITOR FOR CHEMOTHERAPY-INDUCED ANEMIA IN PATIENTS WITH METASTATIC NON-SMALL CELL LUNG CANCER

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Background: Chemotherapy-induced anemia (CIA) is often encountered in treating lung-cancer patients. Erythropoiesis-stimulating agents are FDA approved for treating CIA; however, concerns remain about negative effects on survival and/or tumor progression. Sotatercept (ACE-011) is a soluble receptor fusion protein consisting of the extracellular domain of activin receptor IIA linked to the IgG1 Fc domain which increases release of mature erythrocytes into circulation. Early phase clinical trials support sotatercept development for the treatment of CIA.

Methods: Single-blind, randomized, phase 2a, dose-ranging study (Part 1) followed by a phase 2b/3, double-blind, randomized, placebo-controlled study (Part 2) of sotatercept for patients with metastatic non-small cell lung cancer (NSCLC) treated with first-line platin-based chemotherapy. Patients with hemoglobin ≥6.5 to 11.0 g/dL, ECOG Performance Status ≤2, and adequate renal function are eligible to enroll.

In Part 1, up to 90 NSCLC patients with CIA will receive sotatercept (15, 30, or 45 mg SC every 6 weeks for 4 doses) to determine an effective dose level.

In Part 2a, 180 patients will be randomized to sotatercept or placebo. An interim assessment based on transfusion rate at 4 months will be performed. In Part 2b, 570 additional patients will be randomized to achieve full accrual. During Part 1/2, response rate, time-to-progression, progression-free and overall survival, safety, pharmacokinetics, hematopoietic response duration, and QOL will be assessed. Exploratory analyses will assess the effects on bone metabolism, dose-response relationship, activin A expression, circulating tumor cell enumeration, and renal function biomarkers.

Results: The trial is currently enrolling patients in 3 initial sites (ClinicalTrials.gov NCT01284348).

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OXALIPLATIN CHRONIC PERIPHERAL NEUROPATY AS A DEMYELINATION PROCESS AND APPROACH TO NEUROTOXICITY MANAGEMENT

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Objectives: Palliative multiple course with oxaliplatin is an often cause of neurotoxicity. Peripherial neuropaties become chronic in 15-20% of cancer patients. The mechanism of this irreversible process and its prevention remains unclear. The aim of the present study is to investigate the effect of Polyprenol (PP), which provides a dolichol phosphate (DolP) substitute in N-glycosylation of E-cadherin and myelination process control.
Methods: Oxaliplatin chronic neurotoxicity was reproduced in a rat model. E-cadherin expression was examined in sciatic nerve. PP concentration in the culture medium made up 10^{-2} -10^{-6}. Immunohistochemical methods were used to detect the changes in the expression levels of E-cadherin. Intermediates of Dolichyl Phosphate Cycle (DPC) fractions were analysed by HPLC method.
Results: Neurotoxicity process causes DolP and E-cadherin drop in Schwann cells (SC). SC differ from normal one in E-cadherin content lost by 3–4 times. Pathologic process causes abberant N-glycosylation of E-cadherin in DPC. Roentgenostructural analysis displayed the change in the conformation of myeline proteins, the biolayer geometry and its added accessibility for protease action. Treatment of SC with PP in the concentration 10^{-4} M leads to regulation of E-cadherin N-glycosylation in SC and start of remyelination process.
Conclusions: Oxaliplatin neurotoxicity could cause dysregulation of N-glycosylation of E-cadherin which lead to lost of the initial contact between a myelinating SC and axons affecting the stability of tight assembly. The findings indicate that mechanism of chronic oxilaplatin neurotoxicity exhibit demyelinating form of neuropathy, which could be managed by E-cadherin loss prevention with PP.

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MINDFULNESS-BASED INTERVENTION: EXISTENTIAL WELL-BEING, LOSS AND GRIEF IN WOMEN WITH BREAST CANCER

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Existential, loss and grief factors pervade the cancer experience. Surprisingly, no mindfulness-based stress reduction study has examined intervention effects on existential, loss and grief factors in cancer patients.
Objectives: To investigate the effects of an 8-week mindfulness-based stress reduction intervention (MBSR) on pre-post intervention scores for existential well-being, self-identified loss categories, and grief in women with breast cancer.
Methods: Fifty-three breast cancer patients, referred by oncologists, were taught basic mindfulness skills. The intervention occurred once weekly for 1.5 hours over 8 weeks in a hospital, where the participants received training in the body scan, sitting meditation, hatha yoga, and mindful walking. All had been diagnosed within the past 12 months ranging from Stage I (68%) to Stage II (32%). The mean age was 45.4 years. Most were white (94%), middle class (92%) and married (60.8%), of Protestant faith (96%), and college education (68.0%). The measures used were: the Existential Well-being subscale (Paloutzian & Ellison, 1982); section B of the Grief Diagnostic Instrument (GDI) to assess loss categories; and, section C of the GDI to determine grief scores (Clark et al., 2006).
Results: Existential well-being scores significantly increased post-intervention ($t=6.73$, $p<.001$). The loss categories with the greatest frequencies were separation and fear of death. Significant decreases were found for pre-post grief scores ($t=3.36$, $p<.01$).
Conclusions: Results provide initial support the MBSR as an option for this population in dealing with emotional distress secondary to their disease.

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ACHIEVEMENT OF PERSONALIZED PAIN GOAL (PPG) IN CANCER PATIENTS REFERRED TO THE SUPPORTIVE CARE CLINIC AT A COMPREHENSIVE CANCER CENTER

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Objectives: The patient's PPG (0–10 pain-intensity that patient considers to be comfortable- in physical, functional, and psychosocial domains) is a simple patient reported outcome for pain relief. Study was conducted to determine proportion of cancer patients who achieve their PPG, and identify factors associated with non-achievement.
Methods: Records of consecutive cancer patients seen in consultation, with follow-up visits ($n=348$) were reviewed. Pain-response was defined as clinical-response (30% or ≥2 point pain reduction) and PPG-response (if pain ≤ PPG).

Results: 239(69%) patients had pain ≥4. At follow-up (median 14-days), pain significantly decreased (7 versus 5, p<0.001), while PPG remained stable (median 3, p=0.9). 122(51%) patients achieved clinical-response, but only 66 (28%) achieved their PPG (Table). Initial PPG was same (51%) or changed ≤1-point (31%) in 195(82%) patients. Using PPG as gold-standard, sensitivity of clinical-response was 89%, specificity 65%. Baseline factors associated with PPG non-achievement included higher Memorial-Delirium-Assessment-Scale scores (odds-ratio 1.43, p=0.002), positive alcoholism screening (CAGE ≥2) (2.79, 0.04) and insomnia (1.13, 0.04).

Conclusions: Our preliminary findings suggest that PPG, a simple patient reported outcome for pain relief, is stable over time, and that traditional definitions of clinical-response have a large percentage of false-positives. Delirium, alcoholism history, and insomnia predicted PPG non-achievement.

	Achieved PPG		
Clinical Reponse	Yes	No	Total
Yes	59	60	119
No	7	111	118
Total	66	171	237

[Clinical-response by PPG-response]

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ONE-YEAR SAFETY ANALYSIS OF FENTANYL PECTIN NASAL SPRAY (FPNS) IN PATIENTS WITH BREAKTHROUGH CANCER PAIN (BTCP)

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Objectives: To assess the long-term safety of fentanyl pectin nasal spray (FPNS), a new treatment in Europe for breakthrough cancer pain (BTCP), a 16-week study with an optional extension period (EP) was conducted. This report is the 1-year EP analysis.

Methods: Patients (new or from a previous study) experiencing 1–4 BTCP episodes/day while taking ≥60 mg/day oral morphine (or equivalent) entered the 16-week, open-label study. Upon completion, patients then had the option to enter the EP. FPNS was used to treat ≤4 BTCP episodes/day. During the EP, subjects were reviewed every 4 weeks; adverse events (AEs), concomitant medication and study drug reconciliation data were gathered.

Results: Overall, data were available for 157 patients for the 1-year analysis; 65 (41.4%) patients were exposed to FPNS for >180 days. Patients primarily received 400-μg (35%) and 800-μg (37.5%) doses. Most withdrawals were due to death associated with disease progression (50/166, 30.1%) or AEs (9/166, 5.4%); a small minority were due to lack of efficacy (2/166, 1.2%). One patient had a treatment-related AE (TRAE) (vomiting) that resulted in death considered 'possibly' related to FPNS. Ten (6%) patients had TRAEs; only two were nasally related (mild postnasal drip and mild nasal dryness [100 μg both]). During the EP, 88.6% of patients required no dosage increase in their initial maintenance dose of FPNS.

Conclusions: FPNS is a highly acceptable treatment option for BTCP that has been shown to offer consistent efficacy, safety and good tolerability in patients receiving BTCP treatment for a 1-year period.

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PATIENTS' VS HEALTH-CARE PROFESSIONALS' VIEWPOINT ON CANCER PAIN MANAGEMENT

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Objectives: Pain, common and burdensome symptom among cancer patients, is "an unpleasant sensory and emotional experience…"(IASP), therefore, an objective evaluation is challenging as well as its management.

This study aimed to assess the disagreement between patients and health-care-professionals (HCPs) about cancer pain management.

Methods: Cross-sectional multicentre (48 Italian hospitals) multidisciplinary study performed to identify patients receiving analgesic therapy (AT). Epidemiological-clinical-therapeutic data were collected. Patients and HCPs evaluated AT effectiveness, independently.

Results: Among 1023 cancer inpatients receiving analgesics, 816 (79.8%) answered to interview: 51.6% males; 55.3% elderly; 52.1% stayed in oncology wards; 27.9% in hospitals with "Pain-Free-Hospital" programme.

Almost all patients (94.1%) received AT around-the-clock; 219 (26.8%) also a rescue therapy. Strong opioids were administered to 61.2% of patients (499/816), weak opioids to 25.7%, non-opioids to 13.1%.

For 18.3% of patients (149/816) this therapy was poor/fair. In HCPs' opinion AT was not able to control pain in 19.7% (n=161).

Comparing these evaluations, 188 cases of disagreement (23%) were found: specifically in 88 cases (10.8%) AT was poor/fair for patients but "efficient" for HCPs.

These patients, respect to the remaining, stayed more frequently in non-oncology (64.8% vs. 45.9%; p=0.0008) and in hospitals without "Pain-Free-Hospital" programme (85.2% vs. 70.5%; p=0.0036).

Conclusions: Our results show that patients' and HCPs' evaluations on cancer pain treatment were often different and the most worried situations were more frequent in wards/hospitals less alert/sensitive to patients with pain.

A greater attention to patients, as well as to specific educational interventions, is necessary to improve the cancer pain management.

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CLINICAL APPLICATION OF LAPAROSCOPIC ULTRASONOGRAPHY GUIDED ROBOT-ASSISTED RADIOFREQUENCY ABLATION FOR HEPATIC CANCER

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Background and aim: Minimal invasive surgery has developed quickly in treatment of hepatic cancer, and the combination of laparoscopic Ultrasonography guidance technique with robot-assisted surgery plays a more and more important role in clinical practice. To explore the clinical value of it, we reported 13 patients with hepatic cancer underwent the laparoscopic Ultrasonography guided robot-assisted radiofrequency ablation.

Method: Davinci Robot-assisted laparoscopic explorations were made in all the 13 patients with hepatic cancer diagnosed by pathology, and then laparoscopic Ultrasonography guided robot-assisted radiofrequency ablation for the tumors were performed.

Result: The operations for all cases were successful and the results were exciting. No complication occured. The conditions of all patients have been well. A month later, following up imaging scannings by ultrasonography and enhanced CT have shown no abnomality in ablation tumor areas and their surrounding tissues, and the blood AFP became normal in all the patients.

Conclusion: Davinci robot surgery system used not only has the advantage of minimal invasive procedure, but has a more ccurate, more clear and more stable image as well, However, surgeons cannot palpate the tumors and the relations with structures adjacent to important organs. The technique of laparoscopic Ultrasonography guidance can not only locate the lesions clearly, but also guide the pathway of operation exactly. By introperative laparoscopic Ultrasonography, the surgeons could be able to know more information between the tumor and its surrounding tissues. We think that laparoscopic Ultrasonography guided robot-assisted radiofrequency ablation is useful and beneficial to minimal invasive treatment of hepatic cancer.

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SPINAL OR EPIDURAL ANALGESIA FOR CANCER PAIN: THE OTTAWA HOSPITAL EXPERIENCE

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Background: Cancer pain is occasionally intractable, resistant to opioids and associated with increased mortality and long hospitalizations. Invasive nerve blocks are perceived as complex, with a high rate of adverse effects.

Methods: Consecutive hospitalised cancer patients (pts) treated with nerve blocks were retrospectively reviewed.

Results: 20 pts were treated with spinal block and 25 pts with an epidural block. Patients had a variety of solid tumours including lung (20%), breast (15%), colorectal (15%), bladder cancer (8%), sarcomas(8%), and others. Median age was 58 years (range 19–85) in the epidural group and 61 (range 49–79) in the spinal group. Analgesics via the spinal catheter included bupivacaine, fentanyl, hydromorphone via the epidural catheter analgesics included epinephrine, bupivacaine, fentanyl and hydromorphone. Patients routinely completed edmonton symptom assesment scales (ESAS) and brief pain inventory scores. A pain relief category was assigned for each patient: 0 = no change in pain/analgesics, 1 = pain/analgesics reduced, and 2 = other analgesics discontinued. Overall, 95.5% experienced pain relief (category 1–2). The table below shows the results of the two procedures.

Pain relief	0	1	2
Spinal Block (pts)	5% (1)	35%(7)	60%(12)
Epidural Block (pts)	4% (1)	56%(14)	40% (10)

[Pain relief in patients with nerve block]

After epidural analgesia pts reported more urinary retention (20%) and numbness (8%). After spinal analgesia there was more fever (10%), pruritus (5%) and nausea (5%). All complications were reversible. Catheter repositioning was required in 3 pts with spinal and 2 pts with epidural catheters. 28.8% were successfully discharged home. Survival data will be presented.

Conclusions: Epidural and spinal analgesia were effective palliative techniques in most patients. Complications were generally infrequent and manageable.

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MILLENNIUM DEVELOPMENTAL GOAL PROJECT REDUCING CANCER BURDENS IN A NIGERIAN ONCOLOGY BELT THROUGH ENVIRONMENT FACTOR CONTROL

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Objectives: To determine yearly prevalence, environmental factor on cancer burden and impact of millennium development goal (MDG) water project on the yearly occurrence of malignant cancer in Nigeria.

Methods: A two decades study of cancers in south-West Nigerian oncology belt (communities with concentrated cancers) was undertaken. Patients' informed consent obtained and Ethics committee of investigating institution approved study protocol. All cancers patients in Ife-Ijesa cancer Registry (1989–2009) were included. The step two involves mapping and physical visitation to communities. We took samples of soil, water supply, agriculture products and minerals for radioactivity evaluation. The third step evaluated MDG deep water provision impact. The study limitation was inadequate period post MDG project. Krista-Wallis analysis was used for data generated and alpha error was at <0.05 and confidence interval (CI) at 95% was taken to be significant.

Results: A 83.2% of 6456 malignant cancer patients were indigenes of the oncology belt. There was progressive increase of annually diagnosed cancers from 1990 to 2004. The community surface water sources flows from hills where minerals with radioactivity above normal level were found. The cancer burden ratio of 1990 (190 patients) related to 1999(341 patients) was 1.8:1.0 when communities depends on surface water sources and became 1.1 to 1:0 in 2009 (220patients) after MDG projects.

Conclusion: Deep water provision appeared to be an effective community supportive care with clinically observed reduction of annual cancer burden ratio possibly through modification/eliminating common environmental factor essential for cancer expressions in an oncology belt.

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FREQUENCY AND PREDICTORS OF PATIENT DEVIATION FROM PRESCRIBED OPIOIDS AND BARRIERS TO OPIOID PAIN MANAGEMENT IN ADVANCED CANCER PATIENTS (PTS)

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Objectives: 75-80% of advanced cancer pts report pain and almost all receive opioids. Limited knowledge exists on deviations from prescribed opioids (MD-Rx) and barriers to pain control. Poor opioid adherence has been reported in 49-70% of pts.

Methods: We prospectively surveyed 198 pts at the Supportive Care Clinic (SCC) and collected pain score (0–10), MD-Rx, confidential pt-reported prescription (Pt-Rx) and opioid intake (Pt-In), barriers to pain management (Barriers Questionnaire II, BQ-II), and adherence (modified Morisky scale, MMS). We defined deviation as <70% or >130% from prescribed.

Results: Median age was 55, 91 (46%) were females, and 187 (94%) had solid tumors. Median pain was 4 (IQR 3–7). Median morphine equivalent daily dose was 120 mg [Q1-Q3 45–270] for MD-Rx, 100 mg [40–270] for Pt-Rx, and 100 mg [30–250] for Pt-In. MD-Rx and Pt-Rx were highly correlated for regular [$r=0.9$, $p<0.001$] and regular + breakthrough opioid intake [$r=0.94$, $p<0.001$]. 19/198 pts (9.6%) deviated: 11 (6%) used lower than prescribed, and 8 (4%) used higher. Deviation was more frequent in males [$p=0.04$] and non-whites [$p=0.027$]. Non-white race had higher BQ-II (mean 2.16 for other races, 1.76 for African-Americans, and 1.6 for whites, $p=0.01$). Higher BQ-II was associated with lower adherence/MMS (mean BQ-II 2.0 vs. 1.6, $p=0.007$ for motivation domain; mean BQ-II 2.13 vs. 1.57, $p=0.0001$ for knowledge domain) and taking less/no opioids due to cost ($p=0.0017$).

Conclusions: Very few pts reported deviation and most commonly towards less dose intake. These findings suggest SCCs are more successful than other settings in opioid management.

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PHYSICIAN'S EMPATHY IN THE OUTPATIENT TREATMENT OF LOCALIZED PROSTATE CANCER - AN OBSERVATIONAL STUDY

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Purpose: A caring communication between provider and patient is essential to meet patients' information needs and can reduce the emotional distress of cancer patients. Little is known to the assessment of physician's empathy by prostate cancer patients and to possible changes in the physician-patient relationship in the course of prostate cancer treatment. Therefore it is the aim of the our longitudinal study a) to examine the assessment of urologists' empathy by patients with localized prostate cancer, and b) to analyze whether there are changes in the course of treatment in the assessment of physicians' empathy.
Methods: HAROW is a prospective, observational study designed to collect clinical data and patient reported outcomes of different treatment options (Hormonal therapy, Active Surveillance, Radiation, Operation, Watchful Waiting) for newly diagnosed patients with localized prostate cancer under real conditions. At 6-months intervals general clinical data, patient reported outcomes and individual costs are documented. We analyzed data of N=1.216 patients at the time of initial diagnosis (T1) and after six months (T2).
Results: This is work in progress. First results suggest that the overall assessment of physician empathy is very high. However, there is a decline in physician empathy in some treatment groups. Complete results will be presented at the conference.
Conclusion: According to our first results, there is a difference according to treatment groups of localized prostate cancer in the physician-patient-relationship over the course of treatment. Future qualitative and quantitative research from both, the providers' and the patients' perspective, will help to interpret our findings.

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EFFECT OF RESISTANCE TRAINING ON PLASMA LIPID PROFILE IN CANCER CACHEXIA

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Background: Plasma lipid profile is a marker for the diagnosis and monitoring of individuals affected by cachexia associated with cancer. Endurance exercise was been shown to attenuate cachexia, but the effect of resistance training is poorly known.
Aim: To analyse the effect of resistance training upon plasma lipid profile in cachectic Walker 256 tumour bearing rats.
Method: 20 Wistar rats were divided into 4 groups, sedentary (S), tumour bearing (TB), trained (T) trained tumour bearing (TTB). Training was performed on a ladder, which the animals climbed with increasing loads attached to their tails (70%, 90% and 100% of repetition maximum). Training was carried out for 8 weeks, 3 sessions per week. The 6th, TTB animals were injected with Walker 256 tumour cells ($2x10^7$ cells in 1 mL of saline 0.9%). The animals were euthanized and samples of plasma were collected. Plasma cholesterol, triacylglycerol, LDL-c, VLDL-c, and HDL-c were measured with a colorimetric kit and results were expressed in mg/dL. Statistical analysis was performed by ANOVA.
Results: Plasma lipid levels of TB were superior when compared with all other experimental groups, with except HDL-c, with showed no statistical differences. T showed lower values of cholesterol and LDL-c (91.06±1.35 and 7.91±0.46) compared with the control (95.83±2.91 and 19.8±4.4). TTB showed lower LDL-c (11.4±5.7) compared with TB (21.6±6,3). As for HDL, TTB showed higher values (65.5±5.8) when compared with TB (53.3±3.4).
Conclusion: Chronical strength training was not able to modulate cholesterol and TAG, but decrease LDL-c and improves HDL-c in cancer cachexia.

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EXCELLENT PREVENTION OF DOCETAXEL-INDUCED ALOPECIA BY SCALP COOLING AFTER A 50% REDUCTION IN POST-INFUSION COOLING TIME

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Objectives: Scalp cooling is practiced to reduce chemotherapy-induced alopecia (CIA), and in general positive outcomes have been reported. This study examined scalp cooling results in 3-weekly docetaxel regimens (75 or 100 mg/m^2), with two different post-infusion cooling times (PICT).
Methods: In the observational part of this multi centre study, the PICT was 90 minutes. In the second part, patients were randomised between PICT's of 45 and 90 minutes. Patients reported hair loss and tolerance of scalp cooling.
Results: In the observational part, 90 minutes PICT resulted in 81% of the scalp cooled patients (n=53) not requiring a wig or head cover, versus 27% of non scalp cooled patients (n=15). In the randomised part, patients did not need a wig or head cover in 79% (n=38) versus 95% (n=38) in the 90 and 45 minutes PICT groups, which is an insignificant difference (p=0.22). Forty-eight (37%) of the scalp cooled patients were male. Scalp cooling was tolerated very well (VAS 79, range 0–100).
Conclusion: Scalp cooling decreased the use of a wig or head cover, even when the PICT was shortened from 90 to 45 minutes. The shorter PICT is a major advantage in time investment for patients but also for logistics at day care units. Scalp cooling should be offered regularly in docetaxel regimens, also to male patients.In 3-weekly regimens, 45 minutes is now recommended and currently we are studying results after randomisation between 45 and 20 minutes PICT's.

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THE USE OF GLUTAMINE FOR THE PREVENTION AND TREATMENT OF CHEMOTHERAPY-INDUCED NEUROTOXICITY

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Objectives: We designed a pilot study to assess the efficacy of oral glutamine in preventing and treating chemotherapy-induced neuropathy.
Methods: All patients completed a detailed questionnaire prior to glutamine initiation and every two chemotherapy cycles. A specific neurotoxicity scale was used to grade toxicity. Two patient cohorts were evaluated: those receiving glutamine for prevention and those receiving glutamine as treatment of established neurotoxicity.
Results: Twenty patients with several types of cancer were assessed. The first cohort included 5 colorectal cancer patients undergoing oxaliplatin-based chemotherapy. They received glutamine for prevention of neurotoxicity at a dose of 10 g orally three times a day, days 1–7, from their first chemotherapy cycle. One patient (20%) from this group developed grade 1 neurotoxicity, while 4 patients (80%) did not develop any neurotoxicity. The second cohort included 15 patients receiving glutamine at 10 g orally three times a day, everyday, as treatment of established neurotoxicity grade 1 or 2 after several chemotherapy cycles. Eight patients were receiving oxaliplatin-based treatment for colorectal cancer, 5 paclitaxel-based regimens for breast (3), lung (2) and stomach (1) cancer and 2 patients were receiving vindesine for melanoma. Seven out of the 15 patients (47%) had an improvement in their symptoms (3 on oxaliplatin, 2 on paclitaxel and 2 on vindesine). Two patients discontinued treatment due to oxaliplatin-induced neurotoxicity.
Conclusion: These data indicate that oral glutamine could be effective in preventing and treating peripheral neuropathy and warrants further evaluation as a supportive factor for patients undergoing neurotoxic chemotherapy.

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DEVELOPMENT OF AN EXERCISE TRAINING PROTOCOL FOR CACHECTIC PATIENTS

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The paraneoplastic syndrome of cachexia is considered a degenerative chronic and systemic inflammatory disease, being deeply related with the increase of pro-inflammatory factors. No nutritional or pharmaceutical therapy was been so far able to contract its symptoms. In order to down regulate systemic inflammation, our group has currently adopted endurance exercise training in models of cancer cachexia. We previously demonstrated that the exercise both diminishes local and systemic inflammation, decreases pro-inflammatory cytokine and macrophage infiltration in the adipose tissue.
Considering the encouraging results with cachexia models, we decided to develop an exercise protocol for cachectic patients.
The cachectic patients were selected according to the parameters described by Evans WJ et al, 2008, and signed a term in which they agree to donate blood and tissue's samples. We divided the patients in four groups: Control,

Tumor with cachexia, Tumor without cachexia and Cachexia without tumor.
The exercise's protocol consists in 18 sections of 35 minutes. The first five minutes are considered the warming up stage and after that, speed is regulated to rise up the patient's heart beating up to 70-75% of the HR_{max} for ten minutes (stage 1). After that, the patient is submitted to 5 minutes speed allowing the reaching of 50% HR_{max} (stage 2) and then 10 minutes of 70-75% of the HR_{max} (stage 3). At the end, the patients perform 5 minutes of very low intensity walk.
Blood samples and tissues are being collected and cytokines levels measured. Tissue collection occurs during surgery.

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STATINS REDUCE ACUTE AND LATE GASTROINTESTINAL TOXICTY FOLLOWING RADICAL RADIOTHERAPY FOR PELVIC MALIGNANCIES

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Objectives: To assess the efficacy of statins (HMGCoA reductase inhibitors) in preventing or ameliorating adverse fibrotic changes in normal tissue resulting from therapeutic irradiation.
Methods: Gastrointestinal function and quality of life was measured prospectively using the Inflammatory Bowel Disease Questionnaire - Bowel subset ('IBDQ-B') maximum score: 70 (no symptoms) minimum score: 10 (worst symptoms) in a large cohort of patients receiving radical pelvic radiotherapy for histologically proven malignancy. A retrospective analysis of statin usage and IBDQ-B score was undertaken. Patients' General Practitioners ('GP') were contacted for statin prescription details.
Results: In total, 308 patients (F:133, M:175) mean age 68.5 years, completed a median 6 weeks of pelvic radiotherapy (mean dose 60 Gy, range: 45–74 Gy) between January 2004 and October 2006 and 81% of GP responded. Of 253 patients with evaluable data, 39 (18%) were taking statins during radiotherapy and 47 (23%) at one year. Worst mean IBDQ-B score during radiotherapy in non-statin users (Gastrointestinal: 24%, Gynaecological:37%, Urological:39%; M:112 F:102, age: 67.5, mean dose: 58 Gy) was 55.42 points (CI: 53.95–56.90) versus worst mean score in statin users (Gastrointestinal:8%, Gynaecological:23%, Urological:69%; M:30 F:9, age: 73.4, mean dose: 63 Gy) of 60.74 points (CI: 57.93–63.55) resulting in a difference of 5.32 points between groups in favour of statin users. At one year, IBDQ-B scores were mean 61.97 (CI: 60.15–63.78) in non-statin versus 65.19 (CI: 63.09–67.30) in statin users.
Conclusions: The difference in IBDQ-B scores acutely is of clinical importance. Further prospective study is justified.

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EFFICACY AND SAFETY OF SCALP COOLING JUSTIFY MORE FREQUENT APPLICATION—EXPERIENCES OF THE DUTCH SCALP COOLING GROUP

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Objectives: Chemotherapy-induced alopecia (CIA) is a side effect with high impact for patients and scalp cooling is by far the best method to reduce it. The objective of the Dutch scalp cooling group was to optimise scalp cooling results and to make it available for as many as possible patients who are at risk of CIA. Therefore, the aim was to study efficacy and safety of scalp cooling.
Methods: Efficacy was determined by registration of scalp cooling results in 28 Dutch hospitals. Safety was investigated by 2 original studies and literature search regarding skin metastases and scalp skin metastases.
Results:
Effectiveness: Scalp cooling prevented wearing a wig or head cover in 50% (range 8%-97%) of 1414 patients.
Safety: Without scalp cooling skin metastases occurred in 2,5% of the 33,771 adjuvant treated breast cancer patients. Scalp skin metastases were reported in only 0,5% of 885 patients with four or more positive lymph nodes at diagnosis. No increase in scalp skin metastases has been observed in adjuvant treated scalp cooled patients.
Conclusions: Scalp cooling is successful in half of the chemotherapy patients. Fear for scalp skin metastases after scalp cooling is no valid reason for not offering it, however it remains a subject of discussion in the adjuvant setting. Current knowledge resulted in an increase of scalp cooling hospitals from 4 in 2004 to 58 in February 2011 and in development of a multidisciplinary guideline for CIA, including scalp cooling.

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INCORPORATING PALLIATIVE CARE INTO THE INTERDISCIPLINARY EDUCATION OF NURSES, MEDICAL STUDENTS, AND OTHER HEALTH CARE PROFESSIONALS

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Palliative Care is extremely important for cancer patients during treatment and with disease progression. However, many clinicians receive little education regarding palliative and end-of-life (EOL) education and have knowledge deficits regarding symptom management, communication, exploring patient values and desires, psychosocial, and spiritual needs.
Our primary aim was to develop a graduate level interdisciplinary studies (IDS) course in palliative care. This was accomplished with input from local and national clinical experts, built upon current palliative and EOL initiatives (i.e. EPEC, ELNEC, EPERC, etc.), and with funding from the NCI. Our second aim is to evaluate and disseminate our findings and the course materials.
The resultant course is largely web-based and incorporates six didactic modules (optional pediatric module) that learners and faculty discuss online, an onsite half-day simulation lab (distance students complete online), and eight hours of clinical observation with a palliative care team or hospice. The course is required for nursing students but an elective for medical students—and is compressed to fit their clinical clerkship model.
To date, >900 students have taken the course and the number of medical students has grown; >50% now take the course. Pre- and post-course comparisons show significant changes in knowledge regarding culture, communication with palliative care patients, care in the final hours of life, decision making, symptom management, and interdisciplinary team work.
We are now updating the didactic and recorded simulation laboratory portions of IDS Palliative Care with plans to distribute such as a DVD to interested educational nursing and medical programs.

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SUPPORTIVE CARE IN CANCER: SHARING MULTIDISCIPLINARY AND INTERREGIONAL GUIDELINES IN FRANCE

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In April 2008, two regional networks (ONCORA and ONCOLOR) decided to organize on the side-sessions of the National Day Care Support organized by AFSOS[1], a day dedicated to "guidelines common validation".
To explore the possibility of pooling the resources of both networks to support groups working in the development and implementation of regional guidelines in cancer care supports (CCS) and enhance decision, practices in supportive care.
Preliminary work (about pain, nutrition, Fever, bisphosphonates, dyspnea, anti-nausea/antiemetics and sedation in end of life) has been completed, presented, discussed in workshops dedicated and in the plenary (200 participants). The 2nd edition of the "CCS guidelines", in July 2009, was to continue the project, with the consolidation of a common methodology.
After this second experience, the results were:

- the decision of pooling resources by all cancer networks,
- a mission for AFSOS, and ACORESCA[2] and UNR-Santé[3] to propose organization and method
- registering these days as a major meeting between cancer networks around the shared mission to improve access to care quality

Each year the CCS interregional guidelines days will be held in a different region, they are open to all professionals involved in cancer, all members of healthcare teams and all stakeholders in CCS.
The regional guidelines are a tool to promote quality care and medical decision. They allow the adoption of national, international recommendations and "state of the art" in CCS. They are discussed, shared and validated with a rigorous methodological approach and enriched by work in the regions.

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SCALP COOLING LESS EXPENSIVE THAN PURCHASING A WIG: COST-EFFECTIVENESS STUDY OF THE DUTCH SCALP COOLING GROUP

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Objectives: Chemotherapy-induced alopecia (CIA) is a frequent occurring side effect that can be prevented by scalp cooling. This study compared costs of scalp cooling with usual care, i.e. purchasing a wig or head cover.
Methods: Scalp cooled patients were compared to non scalp cooled patients in 15 Dutch hospitals. Severity of CIA and the use of wigs and head covers were measured, as well

as costs resulting from CIA or scalp cooling for patients, hospitals and health insurance companies.

Results: Scalp cooling was effective, it significantly reduced the severity of CIA in scalp cooled patients (n=160) compared to non scalp cooled patients (n=86). It also significantly reduced purchasing and using wigs and head covers. Wigs were unnecessary purchased in 38% of the scalp cooled patients. Scalp cooling appeared to be less expensive (−€252 per patient) than usual care.

Conclusion: Scalp cooling not only reduced CIA, but is also less expensive and is cost-effective from the societal perspective. The results of this study might be an incentive for hospitals to start or continue offering scalp cooling. The advantage in costs when comparing scalp cooled to non scalp cooled patients may easily be increased by using the machine more intensively, postpone purchasing wigs and head covers, and further improve the scalp cooling results.

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EARLY THYREOTOXICITY IN 440 CHILDREN AFTER BRAIN TUMOUR TREATMENT ACCORDING TO THE HIT-2000 PROTOCOL IN GERMANY AND SWITZERLAND

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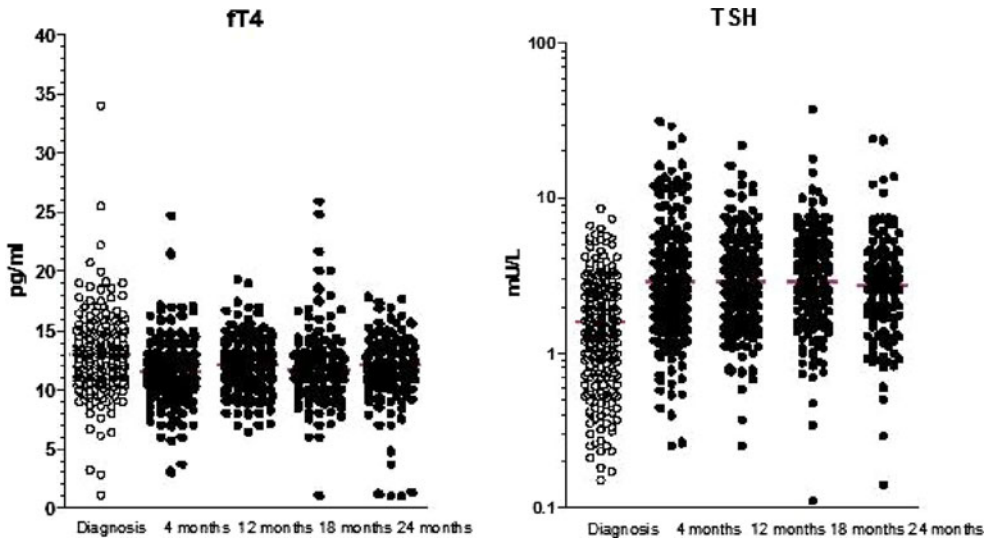
Objectives: Thyreotoxicity can affect up to 30% of patients after brain tumour treatment. The aim of this study was to assess early thyreotoxicity after brain tumour treatment including surgery, polychemotherapy and irradiation in paediatric patients treated within a large population-based treatment trial, the HIT-2000 protocol.

Methods: All patients treated within HIT-2000 in Germany and Switzerland were included in this companion study to the HIT-2000 treatment trial. The thyroid hormones TSH and fT4 were prospectively measured at diagnosis and then 4, 12, 18 and 24 months after end of therapy (see figure). This cohort comprised 440 patients (174 female, 266 male), the median age at diagnosis was 7,62 (IQR 4,37–11,95) years.

Results: A total of 22,9% (101/440) of patients showed signs of thyreotoxicity within the first two years after treatment. Of these, 15,7% (69/440) received substitution treatment with L-thyroxin for primary hypothyroidism, 7,2% (32/440) showed subclinical hypothyroidism and one patient (0,2%) received treatment for hyperthyroidism.

Conclusions: Early thyreotoxicity was a frequent toxicity in our paediatric cohort. This result shows the importance of prospective surveillance of thyroid function after brain tumour treatment, to be able to initiate necessary interventions.



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ANGIOTENSIN-CONVERTING ENZYME ('ACE') INHIBITORS REDUCE ACUTE AND LATE GASTROINTESTINAL TOXICITY FOLLOWING RADICAL RADIOTHERAPY FOR PELVIC MALIGNANCIES

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Objectives: To assess the efficacy of ACE (Angiotensin-converting enzyme) inhibitors in preventing or ameliorating adverse fibrotic changes in normal tissue resulting from therapeutic irradiation.
Methods: Gastrointestinal function and quality of life was measured prospectively using the Inflammatory Bowel Disease Questionnaire - Bowel subset ('IBDQ-B') maximum score: 70 (no symptoms) minimum score: 10 (worst symptoms) in a large cohort of patients receiving radical pelvic radiotherapy for histologically proven malignancy. A retrospective analysis of ACE usage and IBDQ-B score was undertaken. Patients' General Practitioners ('GP') were contacted for prescription details.
Results: In total, 308 patients (F:133, M:175) mean age 68.5 years, completed a median 6 weeks of pelvic radiotherapy (mean dose 60 Gy, range: 45–74 Gy) between January 2004 and October 2006 and 81% of GP responded. Of 253 patients with evaluable data, 40 (19%) were taking ACE inhibitors during radiotherapy and 49 (24%) at one year. Worst mean IBDQ-B score during radiotherapy in non-ACE users (Gastrointestinal:23%, Gynaecological:36%, Urological:41%; M:116 F:97, age: 67.88, mean dose: 58 Gy) was 55.76 points (CI: 54.29–57.23) versus worst mean score in ACE users (Gastrointestinal:12%, Gynaecological:33%, Urological:55%; M:26 F:14, age: 71.20, mean dose: 62 Gy) of 58.82 points (CI: 55.61–62.03) resulting in a difference of 3.06 points between groups in favour of ACE users. At one year, IBDQ-B scores were mean 61.97 (CI: 60.16–63.77) in non-ACE versus 64.96 (CI: 62.30–67.63) in ACE users.
Conclusions: The acute difference in IBDQ-B scores, maintained at one year post irradiation, merits further prospective study.

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IMPACT OF CHEMOTHERAPY-INDUCED ALOPECIA AND SCALP COOLING ON THE WELL-BEING OF BREAST CANCER PATIENTS

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Objectives: The objectives of this study were to assess the effect of scalp cooling to prevent chemotherapy-induced alopecia (CIA) on well-being and to obtain insight into the severity and burden of CIA, the burden of scalp cooling and satisfaction with wigs.
Methods: This multi-center study included breast cancer patients treated with (n=98) and without (n=168) scalp cooling. Questionnaires were completed before chemotherapy and 3 and 6 months after completion of chemotherapy. Measures comprised quality of life (QoL), body image (BI) and ranking of side effects of chemotherapy.
Results: Scalp cooling was effective in 52% of the patients. Successfully scalp cooled patients had a better QoL and BI than non-scalp cooled patients, whereas unsuccessfully scalp-cooled patients reported lowest QoL and BI. CIA was considered among the most distressing problems at all time-points and was a burden for 54% of the patients. Scalp cooling was tolerated well and 82% of the patients were satisfied with their wig.
Conclusion: A trend towards higher well-being was found in successfully scalp-cooled patients, but when patients lost their hair despite scalp cooling a lower well-being was observed. We recommend not only attention for CIA before chemotherapy, but also additional support for patients when CIA ultimately occurs, with or without scalp cooling.

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UTILIZATION OF THE 'BODY IMAGE AFTER BREAST CANCER' QUESTIONNAIRE (BIBCQ) FOR WOMEN UNDERGOING CENTRAL WIDE LOCAL EXCISION (WLE)

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Objective: Diagnosis and treatment of breast cancer can affect patient quality-of-life. Our objective was to assess post-operative satisfaction of women undergoing WLE of the retro-areolar complex in a single centre.

Methods: We reviewed 13 women who had undergone WLE for retro-areolar breast cancer since 2009 in a district general hospital. We utilised the 53 question BIBCQ (6 score scales: Vulnerability, Body Stigma, Limitation, Body Concerns, Transparency and Arm Concerns) which is a verified assessment tool quantifying the effect of breast surgery on the patient's quality-of-life. We focused on the loss of the nipple & the psychosocial effects on the patient:
Q.25. I am unconcerned with the loss of my nipple.
Q.26. I am satisfied with the size of my breast.
Q.29. I feel that people are looking at my chest.
Q.43. I can participate in normal activities
Q.50. I feel people can tell my breasts are not normal.
Scores:
1 = Strongly Disagree,
2 = Disagree,
3 = Neither Agree/Disagree,
4 = Agree,
5 = Strongly Agree

Results:
Q.25. Median=3.0; Mean=3.0; Std. Error=0.33
Q.26. Median=4.0; Mean=3.5; Std. Error=0.23
Q.29. Median=1.0; Mean=1.85; Std. Error=0.32
Q.43. Median=4.0; Mean=3.92; Std. Error=0.31
Q.50. Median=2.0; Mean=2.08; Std. Error=0.37

Conclusion: The study demonstrates the loss of the retro-areolar complex was not perceived as a negative outcome of surgery and did not adversely affect the patient's quality-of-life.

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INFLUENCING AND SUSTAINING CHANGE IN ORAL CARE PRACTICES: EXPERIENCE OF 10 YEARS AS A CLINICAL STUDY GROUP

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Objective: Oral management of patients receiving cancer therapies aims to reduce complications and increase quality of life. There has been some uncertainty about what constitutes appropriate oral care. In 2001 the Children's Cancer and Leukaemia Group (CCLG) and the then Paediatric Oncology Nurses Forum (PONF) established a clinical study group in response to awareness of variation in practices. The study group included members of the Cochrane Oral Health Group, thus ensuring an iterative process between development and implementation of evidence.

Methods: A baseline telephone survey was undertaken in 2002. Evidenced based guidelines were produced using the SIGN methodology and a range of dissemination methods used to support implementation during 2006. A repeat telephone survey was undertaken in 2009 of the 21 centres and seven bone marrow transplant units. The guidelines were revised in 2010.

Results: The survey confirmed variation in practice and highlighted a need to determine the most effective oral care for the younger population. Evidenced based guidelines have been successfully introduced and are used in 19/25 centres. Although inconsistencies in oral assessment continue, few therapies outside of the guideline were being used and the use of preventative nystatin, not recommended in the guideline, had significantly decreased from baseline by 40%.

Conclusion: National adoption of guidelines has been possible. Challenges remain in maximising oral assessment, and ensuring a consistent approach to dental care. This paper will focus on sharing the process as a model for influencing and sustaining change that could be applied to other areas of supportive care.

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CANCER PAIN: RESULTS FROM ITALIAN SURVEY

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Objectives: In oncology pain management is still a significant problem with considerable clinical and therapeutic implications. Patients suffering from pain are still so many and the need to continue to study this phenomenon is confirmed by multiple parties. A survey on cancer patients was carried out in 48 Italian hospitals.

Methods: Cross-sectional study performed, in 6 index-days, to identify patients receiving analgesics. Demographic,

clinical and therapeutic data were collected for each patient. Patients were asked about pain intensity at interview and during the previous 24-hours (pain 24 h), using a verbal rating scale.

Results: Among 816 patients interviewed, 683 (83.7%) had pain 24 h and 568 (69.6%) at interview, with a decrease of 16.8%.

Despite analgesic treatment, for 273 patients pain intensity continued to be moderate/severe, while for 30 patients it is even increased. These 303 patients were classified as non-responders, while those with no pain or mild pain at interview as responders (n=397, excluding patients without pain 24 h and at interview).

No difference was observed between non-responders and responders respect to variables examined, with the exclusion of pain therapy adequacy, calculated using Pain Management Index. Analgesic therapy resulted inappropriate (PMI<0) in 22.4% of non-responders and in 13.6% of responders (p=0.0023).

Conclusions: Our results show that cancer pain management in Italian hospitals is still problematic. Many patients continue to have inacceptable pain despite analgesic treatment and improvement is minimal. The administration of a non-adequate pain therapy seems to be the main cause of a lack of response by the patient.

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THE ECONOMIC IMPACT OF TREATING ADVANCED LUNG CANCER- A SYSTEMATIC REVIEW

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Introduction: Lung cancer is the leading cause of cancer-related mortality worldwide. The majority of patients are ineligible for curative surgical treatment. Understanding how to combine best clinical outcomes for the most efficient use of resources is important. Therefore, we undertook a systematic review of costs related to managing advanced lung cancer.

Methods: An electronic literature search of EMBASE, MEDLINE and HEALTHSTAR was performed (Jan 2000-August 1, 2010). The search terms "Lung Cancer" and "Costs and Cost Analysis" or "Economics" were used. Inclusion criteria: treatment costs for advanced (stage III-IV) non-small cell lung cancer (NSCLC). Exclusion criteria: mixed cancer or non-treatment costs, case reports, reviews, editorials, and conference reports. Two reviewers independently evaluated articles. Costs are reported in 2010 Canadian dollars.

Results: The literature search identified 3,654 abstracts; 3,611 were excluded. 43 articles were included. The articles spanned 17 countries. Cost identification (16) and cost-minimization (12) were the most common methodologies performed. Overall costs for treating advanced NSCLC ranged from $25,439 (stage IIIb) to $35,717 (distant disease, initial treatment). The majority of articles reported costs for chemotherapy; they ranged from $1,121 (Vinorelbine) to $255,553 (Docetaxel). Costs of Gemicitabine + Cisplatin (8 studies) ranged from $4,243-$69,970. Costs of Docetaxel (8 studies) ranged from $8,785-$255,553.

Conclusions: The literature includes few cost-utility studies (quality of life). Population-based phase IV trials evaluating the costs and effects of advanced NSCLC treatment are lacking. Economic evaluations can influence resource allocation and must be performed to support evidence-based decision making.

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DEVELOPMENT OF BRIEF EDUCATION PROGRAM OF COMPLEMENTARY AND ALTERNATIVE THERAPY FOR ONCOLOGY NURSING

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Background: The over 90 percent of Oncology nursing who work in palliative care unit in Japan have been using some of Complementary and Alternative Therapy(CAT) for end of life care. However, it's still having the problems using CAT because of lack of knowledge and skill, and never enough time and confidence themselves in their practice. Especially, the nurses who work at the general hospital don't know about CAT very well or have difficulty for using CAT.

Purpose: Development of brief and short education program of CAT for oncology nursing setting.

Methods: This study was a cross-sectional study. We develop brief and short program of CAT based on evidence based practice. The first, we selected most popular CAT which is very simple and brief, and easy to use in short time on oncology setting. The selected CAT are hand massage therapy and aromatherapy, tapping touch (Japanese original version), music therapy, and color therapy within 10 minutes procedure. The program are 8 hours session in a day. The research object are oncology nursing at the core of cancer hospital and palliative care unit in Japan. After the nurses take the one day session, Nurses have discussion for how to use CAT in their own practice which they learn today.

Results and conclusion: We will evaluate the nurses' opinion for easy to use CAT in their own practice. This research is still ongoing, we will report results at the congress.

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HEALTH-RELATED QUALITY OF LIFE IN LUNG CANCER PATIENTS USING EORTC QLQ-LC-13 IN A REFERRAL HOSPITAL IN TEHRAN (IRAN)

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Introduction: Measuring Health-Related Quality of Life (HRQL) is increasingly documented to investigate the clinical status of progressive illnesses like lung cancer. This cross-sectional study was performed to investigate the psychometric properties of a specific HRQL tool and changes over time.
Method: 71 consecutive patients with lung cancer who were referred to a tertiary hospital in Tehran, were approached to investigate the effect of treatment on their HRQL, using the Farsi version of the EORTC Lung Cancer questionnaire and two more specific scales.Performance status of the patients was assessed by Karnofsky Performance Status scale (KPS) and Eastern Cooperative Oncology Group scale (ECOG), where KPS of 90 or more and ECOG equal to 0–1 stand for better performance.
Results: 58 lung cancer patients (67% male), with a mean age of 56.4 y (SD: 10.4) completed the questionnaires. Patients differed pathologically, where 6 (10%) had small cell, 42 (73%) non-small cell, and 10 (17%) other types (mesothelioma, sarcoma, etc). 27 patients (47%) had primary lung cancer, 22 (38%) metastatic and the rest (15%) had a cancer with unknown origin. Internal consistency for the QLQ-LC-13 was high (Chronbach's alpha=0.86). Three out of 10 components of QLQ-LC-13 was significantly related to both performance measures ($p<0.05$), however none of the components differed in various cancer types.
Conclusion: The Farsi version of QLQ-LC-13 is a valid and reliable tool to assess the clinical status of lung cancer. Specific performance scales (specially KPS) are recommended to be used along with HRQL tools in lung cancer patients.

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RELATIONSHIP BETWEEN CANCER PAIN, PSYCHOLOGICAL DISTRESS AND PAIN ACCEPTANCE IN ONCOLOGY PATIENTS: A CROSS-SECTIONAL STUDY IN CYPRUS

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Aims: To determine the association between cancer pain, psychological distress and pain acceptance within oncology settings.
Method: This was a cross-sectional study of 141 cancer patients, with various types of cancer, receiving chemotherapy and targeted therapy in the Chemotherapy Day Unit of the BOC Oncology Centre in Cyprus. Assessment measures included the Brief Pain Inventory, the Hospital Anxiety and Depression Scale and the Chronic Pain Acceptance Questionnaire.
Results: Pain severity was significantly correlated with life interference ($r=0.727$, $p<.001$), anxiety ($r=.270$, $p<.001$), depression ($r=.341$, $p<.001$) and negatively correlated with overall acceptance ($r=-.275$, $p<.001$). However, only the Activity Engagement subscale of acceptance was significantly and inversely correlated with pain severity ($r=-0.205$, $p<0.01$), life interference ($r=-0.338$, $p<.001$), anxiety ($r=-0.446$, $p<.001$) and depression ($r=-.550$, $p<.001$). Patients' educational level was negatively correlated with pain severity ($r=-.213$, $p<.05$), anxiety ($r=-.199$, $p<0.5$) and depression ($r=-.237$, $p<.01$). Regression analyses revealed that anxiety was significantly predicted by gender, depression and activity engagement, while depression was predicted by pain treatment, activity engagement, pain interference and anxiety. The most significant predictors accounting for activity engagement were anxiety and depression.
Conclusion: Cancer pain was correlated with life interference, psychological distress and low levels of activity engagement, while patients' educational level was negatively associated with pain and psychological distress. These results, in addition to the bidirectional predictive relationship of activity engagement and psychological distress, necessitate studies examining the effect of educational/therapeutic cancer pain management interventions, focusing on the enhancement of activity engagement.

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THE GREEK HOME PALLIATIVE CARE UNIT "GALILEE": THE STORY SO FAR

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Objectives: Presentation of cancer patients characteristics treated by "Galilee", the first multidisciplinary home palliative care team in Greece.
Methods: Retrospective data from patients' files collected from March 2010 to January 2011. The multidisciplinary team consisted of one physician, three nurses, two social workers and one chaplain. Services were provided at no

charge, during working hours. A 24hour emergency line was also available.

Results: 42 patients have entered the program. The majority of the patients were referred from the collaborating cancer hospital, 11 came from health care professionals practicing in the area and 8 from the local chaplains. There were 26 women and 16 men, aged 28–87 years (mean age 65), most of them bedbound (59%), ECOG P.S.: 3/4. Genitourinary and breast cancers accounted for almost half of the cases. Twenty patients received simultaneous aggressive treatment, while the rest were on supportive care only. Patients were followed for a period of 1 up to 47 weeks. Among them, most were treated for 8 weeks (48%) and the majority (94%) did not exceed 22 weeks. There were over 800 visits at home, by one or more team members, half of them in last 3 months. Up to now, 20 patients died, 60% at home. Only 7/12 who died at home, had been hospitalized during the time of follow up.

Conclusions: During the 11 month period providing palliative care to cancer patients at home, in a suburban area of Athens, has been not just feasible, but steadily growing and fulfilling.

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NEIGHBOURHOOD DENTAL CLINIC PROGRAMME (NDCP) FOR ORAL CARE IN PATIENTS UNDERGOING HEAD AND NECK CANCER THERAPY

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Aim: To address the issues in oral care in patients undergoing head and neck cancer therapy and who were not able to access the oral care by including the neighbourhood dental clinic as a place for oral care for that particular patient.

Methods: The patients who developed complications of head and neck cancer therapy were included in the study The trial group comprised of 10 patients who were mostly located in the northern part of Kerala who were having difficulty in access for the Oral care from the department Oral medicine, Government Dental college, Trivandrum. Patients who were having difficulty in access for the Oral care from the department Oral medicine were asked to contact the neighbourhood dental clinic from their locality. The concerned Dentist from the locality who wished to join the programme was given the detailed chart for the treatment according to the complication developing and the treatment chart (cancer therapy) as well as the history of the patient was sent and the concerned dentist was given future treatment plans for the concerned patients.

Results and observations: Subjective response of the study patients when reviewed, 9 out of 10 patients could achieve the benefit of the programme and the lone case in the study was not able to achieve the benefit due to the lack of response from the patient and their care givers.

Conclusion: Cancer patient's care after the therapy also should be given equal importance as it affects the quality of life of patients.

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ORAL MUCOSITIS AND CANDIDIASIS: UPDATING GUIDELINES IN FRANCE

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The regional cancer network established in 2005 a guideline for oral mucositis and candidiasis based on international literature. This guideline has been review updated in 2010.

Objectives: To develop efficient guidelines on oral mucositis and candidiasis qith a multidisciplinary approach.

Methods: A multidisciplinary regional panel included oncology nurses, palliative care nurses, physicians (oncologist, surges, dentist and supportive care pratician) and methodologist was created to elaborate consensual guidelines regarding recent literature published on this topic between 2005–2010. A very original method was used: after a regional workgroup, the guidelines were submitted to the national level for validation during workshop of the French Supportive Care Group (AFSOS) congress.

Results: Both preventive and curative oral care are indicated to reduce oral and associated systemic complications. Both no medicated and medicated strategies can be used. There are a lot of variations across institutions relative to specific no medicated approaches given limited published evidence. Those guidelines are intended in clinical practice, general practitioners and visiting nurses. Some pictures are included as iconographical bank in the guidelines to use them as a teaching support.

Conclusions: This work has resulted in consensus recommendations at the interregional level. It's now to expanding guidelines to clinical management of systemic complications.

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REPORTING OF FUNDING SOURCES IN THE SUPPORTIVE AND PALLIATIVE ONCOLOGY LITERATURE

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Background: Few studies have examined the reporting of mechanism of funding in the supportive/palliative oncology literature over time. We examined the funding sources in recently published original articles, and various study characteristics associated with funding reporting.
Methods: We systematically searched MEDLINE, PsychInfo, EMBASE, ISI Web of Science, and CINAHL for original studies related to palliative care and cancer in the first 6 months of 2004 and 2009. For each article, we reviewed the study design, research topic, journal type and funding reporting.
Results: 344/848 (41%) articles were from 2004 and 504 (59%) from 2009. 502 (59%) of studies reported no funding sources, while 216 (26%), 70 (8%), 34 (4%) and 26 (3%) reported 1, 2, 3 and ≥4 sources, respectively. Key funding sources included governmental agencies (N=182, 21%), philanthropic foundations (N=163, 19%), university departments (N=76, 9%) and industry (N=27, 3%). Funding sponsors were reported in 107/429 (25%) case reports, 56/95 (59%) qualitative studies, 89/149 (60%) cross sectional studies, 17/21 (81%) population studies, and only 27/47 (57%) randomized controlled trials. The presence of funding reporting was associated with prospective studies (56% vs. 44% in retrospective studies, $P<0.001$), non-therapeutic studies (53% vs. 20% in therapeutic studies, $P<0.001$), larger sample sizes (median 114 vs. 34 for no reported funding, $P<0.001$), and publication in palliative care/oncology journals (47% vs. 20% in others, $P<0.001$).
Conclusions: A majority of supportive/palliative oncology studies did not report funding sources, raising the need for standardization. Industry sponsorship was uncommon, and few therapeutic studies reported funding.

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DEVELOPING "GALILEE": A HOME PALLIATIVE CARE UNIT FOR CANCER PATIENTS IN GREECE

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Objectives: To present the strategic plan of a home palliative care unit development for cancer patients in Greece.
Methods: A steering working group was formulated, chaired by the Metropolitan of Mesogaia and Lavreotiki (Orthodox Church Greece), including health care professionals, legal advisors, administrators, informatics specialists and businessmen. Areas of concern were:

a) multidisciplinary education of health care professionals and volunteers,
b) contacting palliative care experts from abroad to ensure training and mentorship,
c) solving legal issues,
d) collaborating with a cancer hospital for inpatient care of patients
e) developing informatics to achieve continuity of care, and
f) search for funding.

Results: During the two year preparatory phase, seminars by experts on palliative care were organized. Tutors from Casa Sperantei Hospice in Brasov (Romania) supervised and conducted the training program. The core team consisting of a general practitioner, three nurses and two social workers were further trained in the collaborative cancer hospital. A contract was then signed between the hospital board of directors and the Metropolitan. The hospital authorities promoted the program to its population of patients and provided inpatient care as needed. The Ministry of Health granted a license to practice home care, upon request. The church hosted and funded the team. Electronic files are being developed and there are plans to exchange information soon. Continuing education is also provided.
Conclusions: "Galilee" is the first multidisciplinary palliative care unit that provides care to adult cancer patients, at home, without charge, in a large suburban area of Athens, since March 2010.

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INCREASED INTAKE OF VEGETABLES IS ASSOCIATED WITH REDUCTIONS IN PERSISTENT CANCER RELATED FATIGUE

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Persistent cancer related fatigue (PCRF) is a common symptom experienced by many cancer survivors. While there is research recommending individualized nutritional counseling for improving fatigue during cancer treatment there are no recommended dietary treatment options for PCRF. A lack of dietary recommendations is likely due to a need for research examining the possible associations between diet and fatigue. A cross-sectional study was conducted to examine possible associations between diet and fatigue. Between July 2007 and August 2008 dietary intake using a 4-day food diary was assessed in 40 cancer survivors. All survivors had a Brief Fatigue Inventory (BFI) with a score of ≥4 indicating moderate to severe fatigue and had completed all cancer treatments at least 12 weeks

prior to their dietary intakes. *Dietary intake data were collected and analyzed using Nutrition Data System for Research version 2009*. Using multiple regression models with BFI as the dependent variable decreased PCRF was determined to be significantly associated with a modest daily increase in vegetable consumption (p=0.03) and in particular green vegetables (p=0.003) and tomatoes (p=>0.01). However, future more rigorous studies will be required to investigate possible mechanisms and causal relationships regarding the benefits of particular foods or diets on PCRF.

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PARALLEL SESSION VIII: BONE METASTASES 'THE ROLE OF BISPHOSPHONATES IN THE TREATMENT OF BONE DISEASE'

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Symptom control and quality of life are important to patients, families, health care providers and policy makers. Management of bone disease is therefore essential for cancer patients.

Bisphosphonates have assumed an important role in the management of bone disease.

Skeleton is involved in approximately 60%-84% of patients with advanced cancer. Metastatic bone disease contributes to the overall morbidity and the quality of life of these patients by producing pain in 65% to 75% of cases and by causing other complications such as pathological fractures, spinal cord compression, and hypercalcemia.

Noteworthy advances have been made in our knowledge of the mechanism of malignant bone destruction.

Bone destruction is essentially mediated by osteoclast activation witch promote bone resorption.

Given the central role of osteolysis in malignant hypercalcemia, bone destruction, and malignant bone pain, it is logical to use inhibitors of osteoclasts -as bisphosphonates- to modify the process.

Bisphosphonates inhibit osteoclast activation by various mechanisms. They have direct effects on osteoclasts by diminishing their life span. They play also a role in the inhibition of osteoclast precursor recruitment, the inhibition of osteoclastic attachment to bone, and decreased osteoclast activity on bone directly or indirectly following the adsorption of bisphosphonate onto bone. Indirect osteoclastic inhibition via osteoblastic-mediated modifications may also be involved.

They are also emerging as useful, relatively nontoxic adjuvant modalities in the palliative treatment of malignant skeletal involvement, especially in the setting of diffuse skeletal disease.

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SYMPTOM CLUSTERS IDENTIFIED IN A LARGE POPULATION-BASED AMBULATORY CANCER COHORT AND DIVERSE SUB-POPULATIONS

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Objectives: To identify and validate symptom clusters in a large, robust ambulatory population-based sample and in cancer sub-population types.

Methods: A common factor analysis (CFA) with maximum likelihood/varimax rotation techniques was used to identify symptom clusters in an ambulatory population-based cancer cohort (n-11476) based on their intensity scores for nine ESAS symptoms. Bootstrapping and confirmatory factor analysis techniques followed this initial step to validate the clusters in a separate held back sample. The identified factors in CFA are assumed to reflect the underlying structure or biological processes responsible for correlations among symptom variables.

Results: The cluster sample was comprised of mostly older individuals and an almost equal numbers of males and females of varying cancer diagnosis, with lung gastrointestinal, and breast most common. Three symptom clusters emerged in the factor analysis based a priori criteria: factor loading score of >0.30, two or more symptoms, meaningful interpretation, and more than 10% of variance explained. These were labeled: psychological distress cluster; debility cluster; fatigue/tired cluster. Similar clusters were identified for lung and GI cancer sub-populations with differences in clusters noted for breast, head and neck and hematological populations.

Conclusion: Symptoms that co-occur in groups or clusters cause a multiplicative effect on daily functioning and

quality of life and likely survival. This is the largest population based sample conducted to date on symptom clusters and the only study that has used validation techniques to confirm clusters. Cluster differences in subgroups is likely due to latent biological mechanisms that require examination in future research.

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ASSOCIATION OF RENAL DISEASE AND HEMODIALYSIS REGIMEN WITH GENOMIC DAMAGE

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Objectives: End-stage renal disease (ESRD) is associated with oxidative stress from increased oxidant production and decreased antioxidant defences. In stage-5 ESRD, dialysis becomes necessary. However in India, maintenance hemodialysis(HD) is accessible only to few because of economic constraints and may not be standard HD. As HD also induces oxidative stress through membrane bio-incompatibility and endotoxin challenge, cellular macromolecules can be affected and damage to DNA may cause genetic alterations and predisposition to malignancy. Hence, it was thought pertinent to assess genomic damage in ESRD patients on HD after obtaining institutional ethical clearance.
Methods: DNA damage in peripheral blood leukocytes and chromosomal damage in buccal epithelial cells using the Single Cell Gell Electrophoresis (SCGE) and the Buccal Micronucleus (MN) cytome assays, respectively, were assessed in patients on different hemodialysis schedules: once-a-fortnight, once-a-week or twice-a-week. Controls comprised age-, sex- and socio-economic-matched healthy individuals. Voluntary informed consent was obtained from all participants.
Results: Patients had significantly ($p \leq 0.001$) elevated genomic damage compared to controls. Those on standard dialysis (twice/week) had significantly lesser mean DNA migration, percent tail DNA and percent MNd cells compared to those on once-a-fortnight HD; those on weekly dialysis had the least.
Conclusions: Genomic damage in ESRD patients increased with medication time and dialysis onset while frequent dialysis eliminated the uremic milieu and so lesser genetic damage was observed in patients being dialyzed twice/week compared to those on weekly or fortnightly dialysis. Strategies for genomic stability and for cancer prevention are required as genetic damage is an early indicator of malignancy.

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THE EFFECTIVENESS OF NK1-RECEPTOR-ANTAGONIST APREPITANT FOR THE PREVENTION OF NAUSEA AND VOMITING 24 HOURS AFTER SIMULTANEOUS RADIO-CHEMOTHERAPY

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Objectives: Simultaneous radio-chemotherapy with cisplatin for treatment against head and neck cancer, lung cancer, esophagheal cancer and cervix cancer shows a high emetogenic risk profile. Little is known about the the role of the NK-1-antagonist aprepitant for the prevention of nausea and vomiting during the acute phase of radio-chemotherapy with cisplatin.
Methods: A total of 59 patients with bronchial head and neck cancer, lung cancer, esophagheal cancer and cervix cancer treated by simultaneous radio-chemotherapy with Cisplatin (240 mg/m² in total) were included in this clinical trial. While the first group (n=28) received a standard drug antiemetic combination 5-HT3-antagonists and dexamethasone (DEX); the second group (n=31) was treated with aprepitant, 5-HT3-antagonists and DEX. Primary endpoint was acute nausea and vomiting assessed using the MASCC Antiemesis tool (MAT) 24 hours after radiochemical treatment.
Results: The maximum nausea score 24 hours after chemotherapy during the first cycle of 0.62 ± 1.75 in the aprepitant group was significantly lower ($p < 0.05$) compared with 1.67 ± 1.89 in the standard group. The positive effect was stable through the second and third cycle. During the fourth, fifth and sixth cycles no significant difference could be detected.
Conclusion: These preliminary results showing that during simultaneous radio-chemotherapy, the addition of aprepitant to the antiemetic treatment regimen may provide improved prevention of therapy-induced nausea compared to the standard antiemetic therapy.

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ATTITUDES AMONG PATIENTS WITH LATE STAGE LUNG CANCER REGARDING THE ROLE OF EXERCISE IN SYMPTOM BURDEN AND ITS MANAGEMENT

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Background: Exercise is a proven means of improving the function and ameliorating many of the adverse symptoms of advanced cancer. Despite this, exercise and conditioning remain underutilized and patients' beliefs about their roless unstudied.
Design and subjects: Semi-structured interviews with 20 patients (10 men and 10 women) undergoing treatment for Stage IIIB or IV non-small cell lung cancer were conducted and qualitatively analyzed. Participants were questioned about their current activity levels; the influence of their symptoms on their activities as well as what they perceived as barriers and facilitators to exercise performance. Direction perceived to have been received from their professional caregivers was also assessed.
Results: Participants overwhelmingly cited daily activities as serving as their "exercise." Symptoms, particularly treatment related, discouraged participation and fear of harm appeared a concern among younger women. Exercise was recognized as important for physical and mental well being, but seldom as a means to mitigate symptoms. Recalled levels of premorbid fitness and exercise participation, as did weather, modulated current exercise behaviors. Participants preferred to receive guidance from their oncologist but had received only general instructions to "stay active." A lack of formal direction was typically accepted as a sanction of their current activity levels. Participants appeared less receptive to guidance from ancillary health professionals.
Conclusions: Effective use of exercise and activity modification to ameliorate cancer-related symptoms appears to require a linkage to a patient's usual and past activities, proactive negotiation of potential barriers, education regarding symptoms and exercise, and the positive support of their oncologist.

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PREVENTION OF AROMATASE INHIBITOR (AI)-ASSOCIATED BONE LOSS (AIBL) IN EARLY BREAST CANCER (EBC): UPDATED GUIDANCE

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Background: We have previously developed an algorithm to assess fracture risk and direct treatment with or without T-scores (*Ann Oncol*. 2008;19:1407–1416) in women with EBC receiving AIs. Updated guidance is presented.
Methods: Systematic literature review identified recent advances in BMD preservation during AI use. Evidence was assessed based on trial size, design, follow-up duration, and safety.
Results: Fracture risk factors in EBC are AI therapy, T-score <−1.5, age >65 years, family history of hip fracture, history of fragility fracture after age 50, oral corticosteroid use >6 mo, smoking, and BMI<20 kg/m^2 (*Ann Oncol*. 2008;19:1407–1416). The WHO-FRAX algorithm can combine risk factors independent of BMD (for healthy women), but does not address AIBL and may underestimate EBC fracture risk. Bisphosphonates and denosumab can preserve BMD during AI therapy for EBC. Poor compliance may reduce oral bisphosphonate benefits, and long-term efficacy and safety of new drugs are unknown. Overall, bisphosphonate evidence is strongest for zoledronic acid (ZOL; 4 mg q6mo). Potential anticancer activity of ZOL might provide benefits beyond BMD.
Conclusions: Recommendations for treatment and prevention of AIBL: Advise patients regarding exercise, calcium/vitamin D supplements, and baseline BMD monitoring. Patients initiating AI with T-score < −2.0 or ≥2 risk factors should receive appropriate antiresorptive therapy. Reassess BMD at 12 months for patients with T-score >−2.0 and no other risk factors. BMD and compliance should be monitored at 12–24 months during oral bisphosphonate therapy; switch to IV bisphosphonate if response or compliance is inadequate. For all others, BMD monitoring should be individualized.

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ACUPRESSURE FOR CHRONIC CANCER PAIN AND FATIGUE

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Symptom clusters including pain, fatigue, insomnia and cognitive decline after BC treatment are common occurring in approximately 30 to 50% of patients and can persist for years. The etiology of symptom clusters is complex and has been postulated to be due in part to the tumor itself and/or cancer treatments. Collectively this symptom cluster has been termed "sickness behavior" and may reflect a disturbance of neurotransmission within the central nervous system (CNS). Current treatments for chronic cancer pain, and these co-occurring symptoms, have limited efficacy

and/or unacceptable side-effects, and as such there is a tremendous need for new treatments in this area. We are using acupressure, a part of Traditional Chinese Medicine, to modulate symptom clusters in BC survivors. Acupressure may modulate levels of the excitatory neurotransmitter glutamate (Glu) and/or the inhibitory neurotransmitter gamma-aminobutyric acid (GABA) within the CNS. The degree to which Glu and GABA influence cancer pain and co-occurring symptoms has yet to be explored. Our study uses a novel technique of self-administered relaxation acupressure (RA) in BC survivors compared to stimulating acupressure (SA) and standard of care (SC). Also, we will examine GABA and Glu using brain imaging. We will randomize 300 BC survivors with moderate to severe cancer-related pain and or fatigue to one of 3 groups: RA; SA; or SC for 6 weeks followed by a 4-week washout period. Patients in the RA and SA groups will be taught how to self-administer their acupressure regime in a novel approach to reduce patient and provider burden.

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SUPPORTIVE CARE (SC) FAMILY NEEDS OF PATIENTS DYING IN AN INTENSIVE CARE UNIT (ICU)

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Objectives: To review research studies focused on the SC family needs, in order to describe the difficulties/deficiencies in fulfilling them and to determine factors influencing family's satisfaction.
Methods: Systematic review of international literature. 53 research studies were reviewed with no publication date limitation. Medline, Google Scholar database and international scientific journals' databases on internet were used, as well as University of Athens online library. Research studies' results about the SC family needs, the family satisfaction, the perceptions and the role of the ICU staff were included in this review.
Results: Most of the reviewed research studies were conducted in Europe and USA. Many of the family needs are related to the patient and his care, while personal family needs are also present. The most important needs were: to be informed in time in patient's health status, to be present at the moment of patient's death, to be sure that he/she will not be abandoned by the personnel, to be supported in the decision-making process and supported after the patient's death. Most deficiencies occurred in communication and practical support. The sentimental and spiritual support has not been studied adequately yet. Family's satisfaction with the provided SC is influenced by a cluster of factors.
Conclusions: Further research is essential to clarify the SC family needs in an ICU and to investigate ways to improve their satisfaction. Determining and fulfilling the ICU family needs' are as important as investigating the nurses' potential range at the implementation of the SC in an ICU.

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DEVELOPMENT OF A RISK PREDICTION MODEL FOR CHEMOTHERAPY-RELATED NAUSEA AND VOMITING

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Objectives: To

a) assess the contribution of clinical, physiological and psychological variables in the development of chemotherapy-related nausea and vomiting,
b) develop and validate a risk prediction model for CINV.

Methods: Prospective observational study over 3 cycles of chemotherapy, utilising a derivation sample to identify predictors and quantify their effect. A separate external validation sample was used to assess the model's specificity/sensitivity. Patients completed the State-Trait Anxiety Inventory, Symptom Distress Scale and a descriptive questionnaire about sociodemographic characteristics, history of nausea/vomiting and expectation of nausea. At the end of each cycle, patients completed the MASCC Antiemesis Tool.
Results: In the first phase (derivation sample) 285 patients were recruited.Acute nausea was reported in 36.5%, 36.5% and 32.3% during cycles one, two and three respectively, whereas delayed nausea was present in 50.5%, 41.8% and 46.5% respectively. Acute/delayed vomiting was well managed with 7.7–13.3% reporting symptoms over the three cycles. Univariate analyses showed that nausea and/or vomiting was more prevalent in younger ($OR=0.96$, $p<0.001$) or female patients ($OR=2.14$,$p=0.003$), patients with higher expectation of nausea ($OR=1.15$, $p=0.015$), history of nausea/vomiting ($OR=2.37$,$p<0.001$), higher state ($OR=2.04$,$p<0.001$) and trait anxiety ($OR=1.97$, $p=0.004$), higher symptom distress ($OR=2.63$,$p<0.001$) and use of highly emetogenic chemotherapy ($OR=2.12$,$p=0.028$). Multivariate analyses, currently ongoing, will lead to the development of a CINV model which will be tested with the external validation sample of 54 patients in phase-2 of the study.
Conclusions: A prediction model for CINV will have implications for clinical practice, and may lead to a more individualised antiemetic approach.

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INFLUENCE OF IRRADIATION DOSE ON SALIVARY GLANDS IN PATIENTS WITH HEAD AND NECK CANCER BY MONITORING BIOMARKERS IN ORAL FLUID

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Background: All patients with head and neck cancer undergoing radiation therapy suffer from mucositis. Still there are no accepted treatment protocols according to the lack of understanding the complexity of injuries and reparation procedures.
Aim of the study was to quantify the alteration of total fluid volume and monitoring biomarkers indicating stress, proliferation and cell death in oral fluid.
Study design: We included 55 patients with histological confirmed squamous cell carcinoma, treated with radiation with or without chemotherapy. Samples of saliva and blood, were collected at the baseline, during the radiation after the treatment phase. Oral swabs for characterizing the microbiological oral flora and life quality scores were obtained. Based on tumour localisation and extend either conformal three-dimensional radiotherapy or IMRT techniques were chosen.
Results: Most of the patients suffering from a moderate to severe mucositis presented an expected loss of saliva from in a mean 3,8 ml[5,3–2,1 ml) three month 2,5 ml [4,8–1,7 ml] after completion of radiation, whereas the percentage of saliva increased immediately to the basic value. The hormone leptin which is produced autonomously by salivary glands may play a physiological role as growth factor for keratinocyte proliferation declines within the first two weeks from 235.000 ng/ml to 70.000 ng/ml to values nearly not detectable after completion of therapy. In further steps, multilinear regression models have to be calculated to evaluate correlations between the degree of xerostomia/oral mucositis/change in biomarkers and the dose of irradiation received individually during radiation therapy.

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ENDOVASCULAR STENTING IN THE TREATMENT OF MALIGNANT SUPERIOR VENA CAVA OBSTRUCTION

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Background: Malignant etiologies, majority of cases are primary lung carcinoma, account for 60 to 85% of cases of Superior Vena Cava (SVC) Syndrome. Percutaneous placement of endovascular stent is the relatively novel treatment modality and can rapidly ameliorate patients' symptoms. Here we retrospectively analyzed the patients those who were treated with endovascular stenting in certain period of time.
Material methods results: Medical charts of sixteen patients those who were treated with endovascular stenting and followed at our center were analyzed. Median age of patients was 55 years (range 28–71). Fourteen (87.5%) and two (12.5%) patients were male and female, respectively. The etiology of SVC obstruction was lung cancer (12 cases), germ cell tumor (2 cases), Non-Hodgkin's lymphoma (1 case), and Ewing sarcoma (1 case). Eleven (68.8%) patients were initially presented with symptoms of SVC obstruction. All procedures effectively obtained normal venous flow. Rapid relief of the symptoms achieved in twelve (75%) and four (25%) patients at the end of 24 and 48 hours, respectively. One patient had early intervention related complication. Median overall survival time was 9 months (%95 CI, 5.4–12.5).
Conclusion: Percutaneous endovascular stent placement is the effective way to obtain normal venous flow and resolves symptoms rapidly associated with SVC obstruction related to malignancy.

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CLINICAL AND HISTOPATHOLOGIC CHARACTERISTICS OF SKIN RASH IN CANCER PATIENTS TREATED WITH MAMMALIAN TARGET OF RAPAMYCIN (MTOR) INHIBITORS

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Objective: The mTOR inhibitors everolimus and temsirolimus are being investigated in multiple solid tumors and are approved for treatment of renal cell carcinoma (RCC). Whereas they have minimal systemic toxicity, 25–45% of patients develop an eruption which has not been well characterized.
Methods: We retrospectively analyzed 4 patients with a diagnosis of advanced RCC who were treated with mTOR inhibitors. Parameters studied included time to onset, clinical presentation, severity grade, and histopathology.
Results: Patients (n=4, mean age 63.5) treated with everolimus or temsirolimus were analyzed for clinical and histological presentation. An erythematous maculopapular rash (Grade 2, n=2; Grade 3, n=2) with occasional pustules manifested within 1–3 weeks, affecting the face, trunk and

proximal extremities, with associated pruritus in 2 patients. Histopathology revealed perivascular lymphocytic infiltrates with mild vascular damage (n=2) and deep perieccrine and interstitial neutrophilic infiltrate (n=1). In 3 patients, management with topical steroids and oral antibiotics resulted in resolution, but 1 patient required mTOR discontinuation.

Conclusion: Rash to mTOR inhibitors represents a novel drug-induced eruption. A better understanding and management is critical to optimize the use of these agents in cancer.

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IMPROVEMENT OF PAIN RELATED SELF MANAGEMENT FOR ONCOLOGIC PATIENTS: PRELIMINARY RESULTS OF A CLUSTER RANDOMIZED MULTICENTER TRIAL

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Objective: Patients self management skills are affected by their' knowledge, activities and attitudes to pain management. This trial aimed to test the SCION-PAIN program, a multi modular structured intervention to improve self management of cancer patients with pain.

Methods: 263 patients with diagnosed malignancy and pain >3 days and average pain ≥3/10 participated in a cluster randomized trial on 18 wards in 2 German university hospitals. Patients on the intervention wards received, additionally to standard pain treatment, the SCION-PAIN program consisting of 3 modules: pharmacologic pain management, nonpharmacologic pain management and discharge management. The intervention was conducted by specially trained oncology nurses and included components of patient education, skills training and counseling to improve self care regarding pain management beginning with admission followed by booster session every 3 rd day and one follow up telephone counseling within 2 to 3 days after discharge. Patients in the control group received standard care. Primary endpoint was the group difference in patient related barriers to management of cancer pain (BQII), 7 days after discharge. Secondary endpoints are: pain intensity & interference, adherence, coping and HRQoL. ClinicalTrials NCT00779597

Results: Preliminary SCION-PAIN program resulted in a significant reduction of patient related barriers to pain management one week after discharge from hospital: mean difference on BQII was 0.49 pts (95% CI, −0.87 pts. to −0.12 pts; P=0.02). The opened attitude enabled reduced pain intensity, improved adherence and HRQoL.

Conclusion: This trial reveals the positive impact of SCION-PAIN program to improve patients' self management of cancer pain.

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FATIGUED PATIENTS WITH STAGE IV CANCER RARELY RECEIVE GUIDELINE CONGRUENT TREATMENTS

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Fatigue among patients with cancer is prevalent, disabling and treatable. Nevertheless, while fatigue management guidelines have been in place for a decade, their use remains unclear. We, therefore, surveyed 160 patients with Stage IV lung, breast, colon and prostate cancer who reported moderate-to-severe fatigue (i.e., ≥5/10 on an 11-point scale). The cohort was half male, had a mean age of 67 and reported fatigue rating of 6.4. Participants were queried about receipt of treatments highlighted in the 4 fatigue management domains (general management strategies, activity enhancement, psychosocial strategies, and pharmaceuticals) of the National Comprehensive Cancer Network guidelines. Only 16.8%, 11.9%, 9.9%, and 37.3% of the participants reported treatment in any of the domains respectively. Fatigue ≥7/10 increased the likelihood of instruction in activity enhancement but no other domain. The low rates of guideline-compliant treatment reported here are concerning, particularly as better validated behavioral treatments were the least prescribed.

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A CLINICAL INTERVENTION MODEL FOR COMMUNICATION FOCUSING ON EXISTENTIAL UNCERTAINTY—PARTICIPATORY ACTION RESEARCH INFORMED BY QUALITATIVE OUTCOME ANALYSIS

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Objectives: The aim was to develop a team oriented intervention model for palliative cancer care focusing on communicating changes in goals of care.
Methods: A participatory action research project was designed by means of qualitative outcome analysis. Initially, bimonthly focus groups with one palliative care team at an oncology outpatient unit were performed during one and a half year. Previous major results, from qualitative studies into patients' knowledge seeking and experiences of communication and information in palliative cancer care, were used as facilitators for discussion and reflection on the team's professional experiences. Collaboratively, the researchers and the team worked on developing an intervention model for communication and information. Group discussion data were analyzed concurrently. A preliminary clinical intervention model was developed and refined by means of focus groups with additional palliative care teams and patients respectively.
Results: A model of communication and information in palliative cancer care aimed for clinical intervention will be presented, including main concepts, strategies and outcomes. The focus of the model is communication of changes in patients' goals of care in relation to progress of disease as well as patients' existential uncertainty (conceptualized as certainty-uncertainty).
Conclusions: The model is found to have clinical fit, thanks of the collaborative development by clinicians and researchers. The next step is to further evaluate it clinically.

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A SYSTEMATIC REVIEW AND RECOMMENDATIONS FOR CANCER SURVIVORSHIP SERVICES AND POST-TREATMENT PSYCHOSOCIAL INTERVENTIONS

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Objectives: This paper describes a systematic review of the evidence to develop recommendations regarding the:

(1) optimum organization and care delivery structure for cancer survivorship services; and
(2) psychosocial interventions that improve symptoms and other health outcomes in post-treatment survivor populations.

Methods: We conducted a systematic search for guidelines and primary research in over 8 databases followed by a quality appraisal of both guidelines and primary studies using standardized methods. An expert interdisciplinary panel inclusive of methodologists and survivors appraised the evidence and developed evidence-based recommendations on the organization of services and clinical interventions that improve outcomes and optimize health and well-being in the post-treatment survivorship population.
Results: We synthesized evidence in 14 practice guidelines, 8 systematic reviews, and 63 randomized trials to develop 11 recommendations regarding the optimum organization and structure of survivorship services and 8 best clinical practices/intervention recommendations. The recommendations were informed by the empirical evidence in both primary research and existing guidelines based on a review of quality and the expertise of the multidisciplinary panel.
Conclusion: The quality of psychosocial interventions in post-treatment survivors is low and there are many gaps regarding their effectiveness across cancer populations. Moreover, there is a need for structure of care interventions to examine effectiveness of different models of care and the impact of survivorship care plan implementation that is critical to the optimization of health and well-being of post-treatment survivor populations.

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MOFFITT MUCOSITIS ASSESSMENT AND REPORTING SYSTEM (MARS): CLINICAL ASSESSMENT AND DATA COLLECTION METHODS APPLIED TO A PHASE II MULTICENTER TRIAL

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Background: There is no widely accepted standardized system to assess and report mucositis. We aim to develop standardized methods to enhance the reliability and reproducibility of reporting.

Methods: MARS system includes

1) web-based video training
2) stepwise, structured clinical evaluation of pain, extent of ulceration, mode and form of nutrition
3) logic-based algorithm which auto-calculates WHO composite grade for each clinical encounter
4) analytic methods for clinical endpoints, individual elements and composite WHO scores.

Results: The MARS system was applied in 98 patient, multicenter (n=5), single-arm phase II trial evaluating Caphosol in H&N chemoradiotherapy. 30 investigators completed a 15 minute web-based training certification. Of 980 planned assessments (10 per patient: baseline, weekly for 7 weeks, 1 and 2 mo f/u), 863 (91%) were performed. Queries on 104/863 (12%) case report form assessments were satisfied (100% form completion). WHO grade was auto-calculated in all assessments. A random sample of 30 assessments were hand-scored for WHO grade by a H&N radiation oncologist not familiar with the MARS calculation logic/algorithm. 16/30 (53%) assessments were discordant. Clinician training in the MARS algorithm resulted in 100% clinician-to-algorithm grading concordance.
Conclusions: The first three components of the MARS system showed high compliance with training, form completion, and high grading concordance suggesting this system is easy to implement and more reproducible than traditional methods.

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PROSPECTIVE VALIDATION OF SCORING SYSTEMS FOR PREDICTING THE RISK OF ACUTE AND DELAYED CHEMOTHERAPY INDUCED NAUSEA AND VOMITING (CINV)

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Background: Despite the use of standardized anti-emetics, up to 20% of cancer patients suffer from moderate to severe CINV (≥ grade 2). We previously developed cycle based prediction models and associated scoring systems for acute and delayed CINV (Dranitsaris 2009, Petrella 2009). In this study, we prospectively assessed the scoring systems to accurately identify patients at high risk for ≥ grade 2 CINV.
Methods: Patients receiving CT were provided with symptom diaries for collecting CINV data. Prior to each cycle of chemotherapy (CT), the acute and delayed CINV scoring systems were applied to stratify patients into low and high risk groups. External validity was then assessed via a receiver operating characteristic curve (AUROC) analysis.
Results: CINV outcomes data were collected from 95 patients following 181 cycles of CT. The incidence of ≥ grade 2 acute and delayed CINV was 17.7% and 18.2%. As previously reported, major predictors for ≥ grade 2 CINV included; young age, platinum or anthracyline-based chemotherapy, low alcohol consumption, earlier cycles of CT, previous history of morning sickness and prior emetic episodes. Both the acute and delayed scoring systems had good predictive accuracy when applied to the validation sample (AUROC=0.69, 95%CI: 0.59–0.79 and 0.70, 95%CI: 0.60–0.80). Patients identified to be at high risk were 2.8 (p=0.025) and 3.1 (p=0.001) times more likely to developed ≥ grade 2 CINV.
Conclusion: This study demonstrates that our scoring systems are able to accurately identify patients at high risk for acute and delayed CINV.

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THE DEGREE OF DISCOMFORT DUE TO MUCOSITIS IS RELATED TO THE LEVEL OF PRIOR PATIENT AWARENESS?

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To assess the level of awareness in mucositis related discomfort in patients undergone Head and Neck Radiotherapy and comparing with the prior patient awareness.
Materials and methods: The patients who had undergone radical radiotherapy for Head and neck squamous cell carcinoma reporting to the OPD of the oral medicine department Dental College for management of oral complications developed due to the radical radiotherapy were included in the study. The trial group comprised of 42 patients who were affected with mucositis (WHO grading). Patients were assessed level of mucositis related discomfort and comparing with the prior patient awareness. Evaluation of body weight, food intake, pain and grading of mucositis were also made during the post radiation treatment period.
Results and observation: Out of 42 patients, 33 patients were not aware of the severity of the mucositis related complications P<0.01 significant level. Data were collected regarding patient characteristics, including age, gender, body weight, prior and/or current alcohol and tobacco use, primary tumor location, status (new vs. recurrent disease) P <0.01 significant level,Information also was collected regarding the type of radiation therapy received and statistically correlated, P<0.01 significant level.
Conclusion: Acute severe OM is associated with significant discomfort and impairment of the patient's ability to eat and swallow. Prior patient awareness for the discomfort developing due to mucositis can bring down the distress and can lead to patient's acceptance for the inevitable side effects thereby improving the quality of life of patients.

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THE IMPLICATION OF APOPTOSIS AND NECROSIS IN *CASEARIA SYLVESTRIS* ANTITUMOR EFFECTS

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Casearia sylvestris Sw. (Flacourtiaceae) is a medicinal plant known mainly as "Guaçatonga". It has been used by Brazilian folks to treat tumors. The aim of this work was to evaluate *in vivo* the antitumor effect of the ethanol crude extract (CS_{CE}) and its chloroformic fraction (CS_1) by using isogenic Balb/c male mice (20 g b.w.) inoculated with solid tumor in the right paws. 24 hours after inoculation, CS_{CE} or CS_1 (150 mg/kg) was administered (i.p.) daily for 9 days. The response on tumor growth was evaluated by measuring daily the thickness (mm) of the paws until the day 10 when the animals were sacrificed for the study. Longitudinal 5-mm-thick tissue sections from the paws *were* mounted on slides where the effects were assessed by microscopic quantification of the necrotic area and immunohistochemistry detection of apoptosis. CS_{CE} and CS_1 reduced the increase of paw thickness when compared to the negative control (NC) (CS_{CE}=51; CS_1=62; NC=2%). In tumor tissue, CS_{CE} and CS_1 caused a moderate level of necrosis (CS_{CE}=23; CS_1=28%) comparable to that caused by the positive control Doxorubicin (25%). Increased number of caspase-3-cleaved positive tumor cells in samples of tumor tissue from animals treated by CS_{CE} or CS_1 (CS_{CE}=40; CS_1=65; NC=10%) was observed. These findings suggest that both phytoproducts presented antitumor effect associated to an *in situ* induction of necrosis and apoptosis.

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SCORING ANXIETY, DEPRESSION AND QUALITY OF LIFE IN COLORECTAL CANCER PATIENTS AND THE EFFECT OF PATIENT EDUCATION ON THESE PARAMETERS

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Objectives: Colorectal cancer causes psychological events such as depression, anxiety. These problems result in impaired compliance of the patients to the treatment. It is aimed to reveal the impact of patient education on the quality of life (QoL), instantaneous anxiety, depression level.

Methods: Colorectal cancer patients who were candidates for first line treatment were included this study. Anxiety levels were scored with the State-Trait- Anxiety-Inventory (STAI), the QoL with the 36 Item Short-Form-Health Survey (SF36), and the depression level with Hospital-Anxiety-Depression Scale (HADS). The STAI was completed by the patients before the first cycle of chemotherapy and HADS, SF36 questionnaires were completed immediately after the administration of the chemotherapy in the control. In the study group, the patient received in addition a session of education approximately 30 minutes. The STAI questionnaire was completed by the patients before and after education. The HADS and SF questionnaires were completed immediately after the administration of the chemotherapy and education in the study group.

Results: Fifty cancer patients so far have participated. Twenty three patients were in the study group, 27 patients were in the control. There were not statistically significance changes in anxiety, depression and QoL scores between groups. Changes in the STAI scores were statistically significant in study group after education. The SF-36 measures eight domains of health. We compared the each domain and physical functioning score was found statistically significant between groups.

Conclusions: Psychological factors are common in cancer. Patient awareness concerning the disease and the procedures can decrease psychological problems.

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PREVALENCE OF DEPRESSION IN OUTPATIENT ONCOLOGY CLINICS AND ASSOCIATION WITH OTHERS SYMPTOMS

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Background: Depression is frequent in cancer patients, with an estimated prevalence of 15%. Recent studies have shown depression to be an independent predictive factor of cancer-related mortality.

Objectives: We explored the prevalence of depression in outpatient oncology clinics and the association with several

symptoms assessed by the Edmonton Symptom Assessment System (ESAS).

Methods: In this multicentre prospective study conducted from April 2009 to July 2009, we collected the results from ESAS (10 symptoms: pain, nausea, fatigue, drowsiness, appetite, shortness of breath, sleep, depression, anxiety, feeling of well being rated from 0 to 10) and we used the Brief Edinburgh Depression Scale (BEDS). We defined a cut-off score of 6 for 'probable depression' and of 10 for 'highly probable depression'.

Results: 146 patients completed the study. The prevalence of probable depression was 54/146 (37%) and the prevalence of highly probable depression was 20/146 (14%). We found a significant association between probable depression and ESAS: pain (r=0.169, p=0.045), fatigue (r=0.184, p=0.030), depression (r=0.544, p=0.000), anxiety (r=0.490, p=0.000), well being (r=0.323, p=0.000). For patients with probable and highly probable depression, 85% were not on antidepressants (respectively 46 and 17 patients).

Conclusion: Despite available treatments and psychooncology development, depression remains under-diagnosed and thus under-treated. Therefore, depression assessment necessitates systematic screening with adapted tools.

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A QUALITATIVE STUDY OF LATE EFFECTS AND HEALTHCARE NEEDS OF SURVIVORS OF STEM CELL TRANSPLANTATION

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Purpose: We conducted a qualitative study of survivors of allogeneic stem cell transplantation (SCT) for hematologic malignancy, to explore their attitudes about their health, healthcare utilization, quality of life, late effects of treatment, and information needs.

Methods: We completed 12 in-depth cognitive interviews and 3 focus groups of patients with SCT without recurrence of their primary disease per medical record. We used grounded theory methods, wherein themes emerged from consensus between co-coders.

Results: The study included 22 patients (50% male; 73% white; mean age 47y). Participants discussed late effects of their disease, most commonly graft-vs-host disease, compromised immunity, and therapeutic toxicities such as neuropathty, fatigue, and early onset menopause, which modified their lifestyle. Participants felt stress from managing their symptoms, and also left "on their own" insofar as they did not have targeted care for their special needs. They preferred to receive care from SCT specialists, but desired more access and communication with them post-transplant. A major concern was the ability to afford care because of out-of-pocket costs, and problems in dealing with health insurance companies. They preferred providers as their primary sources of information, but also learned from websites, medical journals, and peer experiences.

Conclusion: SCT survivors face continuing and lasting health effects from their disease and therapy. They perceive gaps in coordination of care and access to specialty care for individual toxicities. Since SCT patients frequently use mass media and peer interactions as sources of information, outreach programs should incorporate multimedia dissemination tools and informed peer support.

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FOOD OR MEDICINE: PERCEPTIONS OF ADVANCED CANCER PATIENTS AND THEIR CAREGIVERS REGARDING ARTIFICIAL HYDRATION DURING THE LAST WEEKS OF LIFE

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Objective: To identify the meaning attributed to artificial hydration (AH) during the last weeks of life and whether advanced cancer patients receiving home hospice care and their primary caregivers understand AH to be more like food or medicine.

Methods: Participants were enrolled in a randomized, double-blind controlled trial examining the efficacy of AH in patients with advanced cancer receiving hospice care. In-depth interviews at days 1 and 4 of study enrollment explored the meanings attributed to AH at the end-of-life. Responses to the question, "Are these fluids more like food or more like medicine?" were categorized as "food", "medicine", "both" or "other". Chi-square analyses were conducted with data from 100 interviews (48 patients and 52 caregivers) to identify differences between patients and caregivers, and by gender, age, ethnicity and caregiver relationship.

Results: Overall, 37% of participants understood the fluids to be more like medicine, 36% as food, 16% as both, and 11% as other. No significant differences were detected

between patients and caregivers, or by gender, age or caregiver relationship to the patient. Ethnic minority participants (69%) were more likely than whites (40%) to view parenteral fluids as food, or both, as food and medicine (P=0.017).

Conclusions: The finding indicating that AH is largely conceived as food or both as food and medicine, suggests that many patients and caregivers do not view AH as an over-medicalized end-of-life treatment, but rather as a basic human need. The study also suggests that this important finding may vary across ethnic groups.

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OCCURRENCE OF NAUSEA AND VOMITING IN WOMEN WITH BREAST CANCER UNDERGOING CHEMOTHERAPY TREATMENT WITH FEC AND EC-T

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Objective: To evaluate the occurrence of nausea, vomiting and mucositis in women with breast cancer undergoing chemotherapy treatment with FEC and EC-T.

Method: The study included women with breast cancer before starting adjuvant or neodjuvante chemotherapy treatment. The study was carried out at the Mastology Outpatient Clinic in the *Hospital das Clínicas* at the University of Sao Paulo at Ribeirão Preto Medical School.

Results: The sample included 59 women, mostly white, married and who did not have primary school education. Among the researched women, 30 received FEC and 29 EC-T. Among the participants, 71.2% had nausea, 54.2% vomiting, 50.8% nausea and vomiting and 22% mucositis during chemotherapy. Nausea was present in 70% of the women who received FEC and in 72.4% of those who received EC-T. Vomiting and mucositis were registered in 60% and 20%, respectively, of those who received FEC; and 48.2% and 24.1% respectively for those who received EC-T. The occurrence of nausea and vomiting, simultaneously, was registered in 53.3% of the patients using FEC and 48.2% using EC-T. Women who had nausea and vomiting in the first cycle had an easier time related to the adverse effects in subsequent cycles.

Conclusion: This study showed a high incidence of nausea, vomiting and mucositis. Moreover, it was possible to verify the importance of nurses and health teams in transmitting knowledge, in an attempt to minimize the gastrointestinal adverse effects and improve these patients' quality of life.

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ASSOCIATION BETWEEN FALSE BELIEFS AND THE USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN 844 CANCER PATIENTS: A FRENCH AERIO SURVEY

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Background: Several studies have previously evaluated the use of complementary and alternative medicine (CAM) by cancer patients (pts). Our aim was to assess the association between the use of CAM and misconceptions in oncology.

Methods: In 2010, cancer patients were asked to complete a questionnaire in 18 oncology units in France. In order to evaluate patients' beliefs, we assessed their use of CAM and asked 9 questions about potential risk factors for cancer.

Results: 844 questionnaires were retrieved. Median age was 60 years, 64% were women. Breast (38%) and colorectal (12%) cancers were the most frequent tumors. 58% (n=491) were metastatic. 82% (n=693) were treated with chemotherapy and 39% (n=327) with targeted therapies. 60% of pts (n=506) used at least one type of CAM. The most popular CAM were homeopathy (33%), omega-3 fatty acids (28%), probiotics (23%), an alternative regimen (22%), vitamin C (23%), green tea (20%) and sport (20%). 46% of CAM users (n=205) had never spoken about CAM with their health workers. 45% of pts thought that their tumor was linked to their way of life. Patients not using CAM were more likely to answer questions correctly about potential risk factors for cancer and seemed to be less informed or were more likely to acknowledge their ignorance. For 81% (n=582), a website designed for CAM information would be helpful.

Conclusion: The use of CAM is widespread in French oncology patients. Our results suggest that patients using CAM are more likely to have false beliefs.

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DERMATOLOGICAL TOXICITY AMONG WOMEN WITH BREAST CANCER UNDERGOING CHEMOTHERAPY TREATMENT

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Objective: To identify the occurrence of dermatological toxicity among women with breast cancer undergoing chemotherapy treatment.
Method: The study was carried out in the Mastology Outpatient Clinic of a University Hospital with women who were about to start a chemotherapy treatment for the first time to treat breast cancer. They were evaluated through an instrument to identify symptoms at each cycle.
Results: 79 women with an average age of 49.3 years participated in the study, 34.2% were aged from 51 to 60 years, and 24.1% (19) were aged under 40 years. Of the 79 researched women, 39.2% received FEC chemotherapy, while 60.8% received EC-T or EC-TH. Dermatological toxicities registered for *each chemotherapy cycle* were alopecia, darkening of nails and venous path, itching, hardened veins, painful veins, acneic rash, dry skin, and *falling off* or losing of nails. It was observed that, regardless the chemotherapy protocol used, there was an impairment of the venous network with painful or hardened veins, which also threatened the movement of the upper limb and made daily activities more difficult. Associated with these complications, extravasation occurred in 6.3% (5) of the participants. Epirubicin, considered vesicant, was the extravasated drug for all women.
Conclusion: Venous path were the most severe dermatological changesm as they have implications for mobility, leading to functional disabilities. Greater importance should be given to these injuries, through the implementation of protocols for evaluation and care.

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VALUES THAT GUIDE THE COMMITTED ACTION THAT IS ASSOCIATED TO THE CAREGIVER ROLE

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The purpose of this investigation was to identify the values that guide the committed action that is associated to the caregiver role and the influence of an intervention in Acceptance and Commitment Therapy (ACT) in the acceptance of private events and development of commited action in valuable direction for people who care for cancer patients. The study was planned using a mixed methodology that integrated levels of qualitative and quantitative analysis. Related to the characterization of the values associated with the caregiver role, a non-experimental, descriptive and cross-sectional design was used (Hernández,Fernández and Baptista, 2006). To identify the influence of the intervention, a quasi-experimental single case, not reversible and multiple baseline with replication design was used (Kazdin, 2000). The participants were five caregivers of cancer patients. The results shows that some of the values associated with the caregiver role are: to avoid the patient's suffering, the family support, patients quietness and comfort, wanting the other's welfare and enjoy the act of caring; this role was also defined according to other relevant emerging categories. After the intervention changes were identified by participants in terms of greater acceptance of private events and development of commited action in valuable direction.

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EXTRAVASATION OF CYTOTOXIC DRUGS: NURSING CARE. A REVIEW OF THE LITERATURE

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Objectives: Many pharmaceutical agents are available for the treatment of cancer, contributing substantially to the patients' survival. Nevertheless, their administration is often followed by significant toxicity. Part of this toxicity is the extravasation, which occurs when intravenous cytotoxic drug passes from the blood vessel into the surrounding tissue.
Methods: Electronic databases were searched in order to find published articles between 2006–2010 in greek and english literature, using the words "extravasation", "cytotoxic drugs" and "nursing care".

Results: In this literature review were included 62 out of 137 articles. According to them, extravasation is a rare but serious condition. It has serious implications on the quality of life of the patients, because it prolongs their hospitalization, delays their therapy and increases expenses.
Conclusion: Extravasation is a rare but serious complication of chemotherapy, with multiple consequences on the patients and the health care system. Nurses are the first who recognize this situation, so they have to be able to manage it properly. Patient information is also important for the immediate report of any symptom suggesting extravasation.

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ORAL MUCOSITIS IN PATIENTS WITH HEAD AND NECK CANCER: PREVENTION AND NURSING CARE

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Objectives: The intensity of radiation therapy and chemotherapy in the management of cancer has increased the incidence of adverse effects, especially oral mucositis. Oral mucositis is defined as the inflammation of the mucosal membranes that line the inner surfaces of the mouth.
Methods: A bibliographical review was conducted between 2005 and 2010 on the oral mucositis, head and neck cancer, prevention and nursing care in both english and greek language. Criterion of inclusion was the relevance with the subject and of exclusion was the inability in accessing the full text of an article.
Results: In this literature review we enclosed 114 out of 296 references from which we observed that oral mucositis causes pain and other symptoms that effect quality of life. In addition, it may become a barrier to successful administration of chemotherapy and/or radiotherapy.
Conclusion: Oncology nurses are in a unique position to recognize, assess and treat the symptoms of oral mucositis through their frequent contact with the patients, allowing them to define risk factors and intervene with preventive strategies. Prevention could be achieved by the application of oral care protocols which include patients', families' and health professionals' education.

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SCALP-COOLING FOR THE PREVENTION OF CHEMOTHERAPY-INDUCED ALOPECIA: EFFICACY, TOLERANCE AND IMPACT ON SELF-IMAGE, ANXIETY AND QUALITY-OF-LIFE AMONG CANCER PATIENTS

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Objectives: To evaluate prospectively the efficacy and tolerance of scalp-cooling to prevent chemotherapy-induced alopecia, and to assess the impact of alopecia and scalp-cooling on state anxiety, perception of self-image and Quality-of-Life.
Methods: Cancer patients undergoing taxane or anthracycline-based chemotherapy were eligible, and compared to a reference group similarly treated but without scalp-cooling. Assessments were performed at the start and end of chemotherapy, by WHO criteria for alopecia and questionnaires for tolerance and psychological parameters.
Results: A total of 80 patients entered the study, 33 used scalp-cooling and 47 didn't. Scalp-cooling prevented complete hair loss in the majority: hair loss frequency was constantly lower in patients using the system, 57% and 75% of patients at the taxane and anthracycline arm, respectively, had no hair loss or experienced only grade 1 alopecia. These measurements were significantly better than the reference group ($p<0.01$). The cooling process was very or reasonably comfortable in 80% of patients. State anxiety decreased between first and last chemotherapy in 72% of patients, while 84% reported better self-image using scalp-cooling. The majority of patients using scalp-cooling reported higher general well-being compared to the reference group ($p<0.05$), as indicated by better Quality-of-Life measurements and better body image. Locus of control measurements will also be presented.
Conclusion: The scalp-cooling system is effective and well-tolerated for the prevention of chemotherapy-induced alopecia and contributes to the patient's well-being by reducing stress and negative self-image perception. It should be considered as a supportive option for patients receiving chemotherapy that causes alopecia.

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DEXAMETHASONE TOXICITY AND QUALITY OF LIFE IN PATIENTS WITH BRAIN METASTASES TREATED WITH WHOLE BRAIN RADIOTHERAPY

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Objective: To assess dexamethasone dosing and quality of life (QOL) in patients with brain metastases treated with whole brain radiotherapy (WBRT).

Methods: From 2007 to 2010, patients with brain metastases were assessed pre and post-WBRT with the European Organization for Research and Treatment of Cancer palliative core questionnaire (EORTC-QLQ-C15-PAL) and the Dexamethasone Symptom Questionnaire (DSQ).

Results: Sixty-eight patients completed both questionnaires at baseline. Only the QLQ-C15-PAL appetite loss scale was significantly related to dexamethasone duration($p=0.03$), in that patients who were on dexamethasone for a longer period of time reported less lack of appetite. When comparing QLQ-C15-PAL scores with dexamethasone dose at week 2 post-WBRT, patients on a higher dexamethasone dose had worse physical ($p=0.0223$) and emotional ($p=0.0082$) functioning, as well as fatigue ($p=0.0414$) and dyspnea ($p=0.0117$).

At month 1, a higher dexamethasone dose was significantly related to better overall QOL ($p=0.0395$) and less appetite loss ($p=0.0263$).

At month 2, patients on a higher dexamethasone dose had significantly lower physical functioning scores ($p=0.0026$), and scored significantly higher on the pain ($p=0.0138$) and dyspnea ($p=0.0035$) symptom scales.

When comparing dexamethasone dose with DSQ scores, a higher dose was significantly related to trouble sleeping ($p=0.009$) at week 2 post-WBRT. At month 1 post-WBRT, a higher dexamethasone dose was significantly related to less nausea ($p=0.0133$).

Conclusion: This study has been the first to use the DSQ and QLQ-C15-PAL in this patient group to assess how symptoms, functioning, and QOL may be affected by the disease and the various treatments.

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USE OF THE MOATT© FOR ADHERENCE AND KNOWLEDGE OF ERLOTINIB IN LUNG CANCER PATIENTS

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Objective: This evidence-based nursing study focuses on non-small cell lung cancer (NSCLC) patients who are receiving erlotinib in the DFCI ambulatory setting. An objective of this study includes examining knowledge using the MASCC© Oral Agent Teaching Tool (MOATT©) in patients receiving erlotinib as an oral anti-cancer agent. The primary objectives are to:

1) Implement an evidence-based project to enhance oral anti-cancer therapy knowledge of erlotinib to improve medication adherence; and,
b) Utilize the involvement of direct care nurses (DCN) in the education and monitoring of patients starting erlotinib therapy.

Methods: The pilot study includes an educational phone session by the DCN with the NSCLC patient utilizing Parts 1–4 of the MOATT©, followed within 72 hours by a phone call evaluation using the MOATT© (Parts 3–4). At the first clinic visit after starting erlotinib, the patient is also assessed for knowledge, adherence, and adverse drug effects.

Results: Preliminary findings indicate that the MOATT© has been very useful in educating and monitoring patient knowledge about erlotinib therapy. Key assessment questions can be tailored to individual needs. General information, questions to evaluate patient learning, and drug specific information are also very relevant in educating this population. The Morisky Medication Adherence Scale, 8-item, a self-report measure, is also being used to evaluate adherence.

Conclusions: Further evaluation of practice implications for monitoring erlotinib knowledge, side effects, and follow-up care by nurses is ongoing.

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RETROSPECTIVE STUDY TO EVALUATE THE PATIENT TIME BURDEN ASSOCIATED WITH OUTPATIENT RED BLOOD CELL TRANSFUSIONS IN CANCER PATIENTS RECEIVING CHEMOTHERAPY

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Objectives: This study estimates the time related patient-burden associated with outpatient RBC transfusion.

Methods: A retrospective chart review of cancer patients receiving an RBC transfusion will be conducted at 10 US outpatient centers. RBC transfusion time was measured as time elapsed from pre- to post-transfusion vital sign assessment and from transfusion start to stop time. Elapsed time from hemoglobin level testing and blood draw for cross-match to transfusion, estimated travel time and distance, and clinical and demographic data were also collected.

Results: Preliminary results from 30% (n=45) of the target sample (35.6% male; mean age 63 years) demonstrated that the mean elapsed time between pre- and post-vital sign assessment was 4.61 hours (95% CI: 4.04-5.19). Hemoglobin level testing (mean Hg level: 8.32 g/dL) and blood draw for cross match were completed an average of 39.25 hours (95% CI: 11.26–67.24) and 17.59 hours (95% CI: 5.83–29.35) prior to transfusion, respectively. Patient one-way travel time averaged 26.76 minutes (95% CI: 9.87–43.66).

Patient RBC Transfusion Burden

Pre-RBC Transfusion Visit Time	Mean	SE	Range	95% Cl
Hemoglobin Level Testing to Transfusion	39.25 Hours	10.08	1.92 to 120.8	11.26 to 67.24
Blood Draw for Cross-Match to Transfusion	17.59 Hours		1.00 to 45.43	5.83 to 29.35
RBC Transfusion Elapsed Time				
Pre to Post Vital Signs Assessment Time	4.61 Hours	0.021	1.75 to 6.92	4.04 to 5.19
Transfusion Start Time to Stop Time	3.91 Hours	0.2484	1.58 to 6.25	3.22 to 4.60
Travel Burden				
Distance	18.14 Miles	4.08	0.79 to 56.03	6.82 to 29.45
Time	26.76 Minutes	6.08	2 to 84	9.87 to 43.66

[Patient RBC Transfusion Burden]

Conclusions: RBC transfusions for CIA patients require blood testing visits and site travel in addition to the timely transfusion procedure. This burden required may be considered when deciding on an anemia treatment preventing the need for transfusions.

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EXPERIENCES WITH FACT-EGFRI-18 QUESTIONNAIRE IN DUTCH PATIENTS

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Objective: Test the pretesting version of the Dutch FACT-EGFRI-18, a patient reported outcomes questionnaire. The process used ensures reliability, linguistic validity and comparability of the data collected between languages in international clinical trials. Formal validation and reliability testing is being conducted in the BeCet (NCT01136005) multicenter trial of epidermal growth factor receptor inhibitors (EGFRI)- induced patients with all dermatological reactions (dR) severity grades.

Methods: The pretesting version of the Dutch FACT-EGFRI-18 was administered to 10 patients with various stages of dR to EGFRI in the Netherlands. Patients completed the pilot questionnaire first and were asked questions in structured interviews about the items' personal and cultural relevance as well as their overall comprehension of the items.

Results: Responses reflected major impact on psychological, social and functional domains. For example, patient reports being "irritated and grumpy", "must swim with clothes on", and "partner sleeps separately as patient scratches scalp all night".

Conclusions: dR reduces patients in their freedom and interaction with others. The impact of the dR mismatches with the objective severity of the dR as assessed by the oncology staff. This justifies using this questionnaire to obtain additional information. Besides the linguistically validation of the Dutch FACT-EGFRI-18, we identified the adverse events which to tailor on first in clinical trials. The FACT-EGFRI-18 is available at www.facit.org.

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ORAL MUCOSITIS EXPERIENCE IN HEAD AND NECK CANCER PATIENTS USING THE PATIENT REPORTED ORAL MUCOSITIS SCALE (PROMS)

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Objective: Validate the PROMS tool for assessing patient reported oral mucositis (OM).
Patients and methods: Head and neck cancer patients receiving radiation therapy were invited to partake in a prospective study (UHN REB #09-0231-CE). A priori inclusion and exclusion criteria were used for screening purposes. The patients were examined clinically once before therapy and thereafter twice weekly during the course of their 6–7 weeks treatments and once again six weeks post cancer treatment. OM was evaluated clinically using NCI-CTC-criteria and the OMAS scale. In addition, the participants completed a PROMS VAS questionnaire and submitted a saline rinse for measurements of albumin and polymorphnuclear neutrophils (PMN). The patient-reported OM experience data were correlated with the clinical and biomarker data and subjected to parametric and non-parametric statistical tests.
Results: Of initially 50 participants 36 completed more or less regularly the whole course of clinical examinations. The change from baseline was statistically significant for all markers of OM (Table 1).

	Before therapy	After 3 weeks	After 7 weeks	Post-treatment
NCI (n>score 2)	0/36 pat.	8/35 pat.	10/24 pat.	0/29 pat.
OMAS (n>score 2)	0/36 pat.	4/35 pat.	8/24 pat.	0/29 pat.
PROMS (0–100)	4 (0–12)	26 (0–83)	57 (0–96)	24 (0–80)
Oral PMNs in rinse (x10^4/ml)	30 (1–110)	86 (2–450)	147 (5–550)	37 (1–123)
Albumin (mg/L)	8 (3–42)	33 (4–184)	86 (144–451)	16 (3–122)

[Table 1]

Conclusion: The PROMS tool demonstrates good correlation with clinical examinations and together with Albumin and PMN measurements adds novel dimensions for assessment of OM to currently available methods of assessment.

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EARLY CONTACT WITH PALLIATIVE CARE SERVICES: A RANDOMISED TRIAL OF METASTATIC CANCER PATIENTS WITH <12 MONTHS SURVIVAL EXPECTATION

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Objectives: We examined the effect of providing contact with a palliative care service when cancer patients were estimated by their oncologist to have <12 months to live.
Methods: We randomly assigned cancer patients with <12 months to live to meet with a palliative care nurse who served as a link to palliative care services and continue standard oncologic care (PC) or standard oncologic care alone (SC). The oncologist estimated the patient's survival at baseline but was blind to the randomisation group. Quality of life (QoL) measures were assessed at baseline and monthly thereafter. Details of cancer treatment and of the final hospital admission and place of death were collected. The primary endpoints were quality of life and context and place of death.
Results: 120 patients were randomized, 60 to each group. 44 patients had gastrointestinal cancer, 23 lung cancer, 19 gynaecological cancer and 17 breast cancer. The mean time since initial cancer diagnosis was 34 months in the SC group and 27 months in the PC group. There was little evidence that early PC contact affected symptoms or quality of life. There were non-significant trends for the place of death of the PC patients to be other than in an acute hospital, and for PC input during their final hospital admission.
Conclusions: The study did not demonstrate a QoL benefit for early referral to PC services. Contact with a palliative care service several months before death may influence the place and context of death of advanced cancer patients.

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PROPHYLAXIS OF RADIOTHERAPY-INDUCED NAUSEA AND VOMITING (RINV) IN THE PALLIATIVE TREATMENT OF BONE METASTASES

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Objective: To document the incidence of radiotherapy-induced nausea and vomiting (RINV) in the treatment of bone metastases among patients receiving prophylaxis with a 5-HT_3 receptor antagonist.
Methods: Patients receiving single (SF) or multiple fraction (MF) palliative radiotherapy (RT) of moderate- or low emetogenic potential for bone metastases were all prescribed prophylactic Ondansetron. The frequency and duration of prophylaxis, and the use of rescue anti-emetics were left to the discretion of the treating physicians. Patients documented episodes of nausea (N) and vomiting (V) in daily diaries before and during RT, and until 10 days following RT completion. Rates of complete prophylaxis for nausea and vomiting respectively (CP = no event and no rescue medication) were calculated for the Acute Phase (the period from the start of RT to the first day following RT completion inclusive) and the Delayed Phase (the second to tenth days following RT completion inclusive).
Results: Thirty-two patients participated (18 male, 14 female, median age 66 years). Prophylaxis was for 1 day (n=20), 3 d(n=2), 5 d(n=2) for SF and 5 d(n=6), 10 d(n=1), 15 d(n=1) for MF.

Treatment Group	n	Combined Phases		Acute Phase		Delayed Phase	
		CP for N	CP for V	CP for N	CP for V	CP for N	CP for V
Moderate-risk, Single Fraction	16	5/16=31%	7/16=44%	9/16=56%	11/16=69%	5/16=31%	7/16=44%
Moderate-risk, Multiple Fractions	7	3/7=43%	3/7=43%	5/7=71%	4/7=57%	3/7=43%	4/7=57%
Low-risk, Single Fraction	8	3/7=43%	4/7=57%	4/8=50%	8/8=100%	3/7=43%	4/7=57%
Low-risk, Multiple Fractions	1	1/1=100%	1/1=100%	1/1=100%	1/1=100%	1/1=100%	1/1=100%

[Table 1]

Conclusion: Despite prophylaxis, RINV was common among patients receiving palliative radiotherapy for bone metastases.

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DISSEMINATED INTRAVASCULAR COAGULATION AND ACUTE TUMOUR LYSIS SYNDROME AT DIAGNOSIS OF CHILDHOOD WIDESPREAD RHABDOMYOSARCOMA - A DIAGNOSTIC DILEMMA

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Objectives: Disseminated intravascular coagulation (DIC) and acute tumour lysis syndrome (ATLS) are extremely rare complications of childhood rhabdomyosarcoma (RMS). Since 1978 only 12 cases of RMS with DIC have been published. All of them resembled hematologic malignancies and posed marked diagnostic and therapeutic difficulties.
Methods: The charts of 50 children with RMS treated in our institution since 1992 have been reviewed retrospectively.
Results: There were only two adolescents (4%) with clinical and laboratory features of DIC and ATLS at diagnosis. Both presented with widespread RMS metastatic to bone marrow (BM) and were suspected for acute leukaemia. Severe DIC-related haemorrhages and pulmonary thromboembolism made diagnostic surgical procedures extremely risky and required life-saving chemotherapy (CHT) despite inconclusive diagnosis. Wide immunohistochemical panel and flow cytometry (FC) immunophenotyping of BM atypical cells enabled proper diagnosis of RMS.
Conclusions: Clinical picture of wide-spread RMS complicated with DIC and ATLS may resemble acute leukaemia and pose a big diagnostic problem. BM infiltration with cells morphologically similar to leukaemic blasts, lacking hematopoietic makers, should suggest RMS diagnosis. Inclusion of desmin, MyoD1 and Myf4 to immunohistochemical panel is obligatory in such cases. Recently, flow cytometric CD45- CD56+ immunophenotype together with Myf4 transcript has been assigned to RMS cells infiltrating BM. Extremely poor prognosis in childhood disseminated RMS complicated with DIC, requires immediate polychemotherapy aimed at diminishing malignancy-triggered procoagulant activity. However, in cases with concomitant ATLS the initial doses of CHT should be reduced and metabolic disorders and renal function monitored.

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UNITED STATES (US) PREVALENCE OF PATIENTS WITH BONE METASTASES IN BREAST AND PROSTATE CANCER

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Objectives: There are approximately 4.9 million U.S. patients with breast cancer (BC) or prostate cancer (PC) according to Surveillance Epidemiology and End Results (SEER). However, there are no national prevalence estimates of patients with bone metastases to facilitate assessment of the clinical and economic burden of managing skeletal complications.

Methods: We developed simulation models to understand the approximate number of BC and PC patients with bone metastases in the U.S. Cancer incidence by age and stage was derived from 2004–2007 SEER data. Literature-based inputs included progression to metastatic disease, likelihood of bone metastases at time of progression, incidence of bone metastases in metastatic patients without initial bone involvement, and mortality rates (for metastatic and non-metastatic patients). The model estimates the point prevalent count of patients with BC or PC and bone metastases for any given month in 2008. The model assumes the population is in a steady-state with similar numbers of new metastatic patients entering the model and patients leaving the model due to death.

Results: The models estimate that approximately 5% of prevalent BC and PC patients have metastases, of whom 75% have bone metastases at any given time. The prevalence of women with metastatic BC is approximately 132,600, of whom 99,400 have bone metastases; the prevalence of men with metastatic PC is approximately 129,400, of whom 100,900 have bone metastases.

Conclusions: In the U.S. the proportions of BC and PC patients with metastatic disease are small; however, the majority of these patients have bone involvement.

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"…I'M JUST WONDERING WHAT'S GOING TO HAPPEN…" PATIENT'S QUERY IN THE TERMINAL PHASE OF CANCER DISEASE

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Objectives: Terminally cancer patients often raise a number of existential queries to health professionals, such as this in the title. If you had ever been asked these kind of questions, you were confronted with the patients' spirituality.

Methods: A review of the literature was conducted over a period of 2005 and 2010 using key words such as "spirituality", "terminally ill" and "cancer patients" in both english and greek language. Only original research articles were retrieved and analyzed.

Results: In this literature review were included 67 out of 133 articles. According to them, issues associated with the end of life included among all "fear of becoming a burden to others" and "what is going to happen". These issues are a major concern for terminally ill patients, but are seldom addressed by professionals.

Conclusion: It's certainly true that nurses, generally, find spiritual health care hard to articulate, because it raises so many questions about life in which there are no specific answers. There may be not necessarily any answers, but we should learn to stay with the questions. Moreover, it appears that the personal characteristics of the health professional, seem to determine the spiritual care that's been given to the patient.

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A HOSPITAL-WIDE SURVEY OF CANCER-RELATED SYMPTOMS IN A TERTIARY CANCER CENTER IN MANILA, PHILIPPINES

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Objectives: The provision of supportive care services to cancer patients is an integral component of quality patient care. Little is known about the prevalence of cancer symptoms in many developing countries. We report on a hospital-wide survey of cancer-related symptoms and quality of life, to help inform the provision of supportive care services in a tertiary cancer center in Manila, Philippines

Methods: All inpatients and outpatients, age 18 years or older were approached for participation in the study. Data were collected using the Edmonton Symptom Assessment Scale.

Results: A total of 172 patients participated in this 3-day hospital-wide survey (94% response rate). There were more men (58%); 75% had early stage of disease; and mean age was 52 years (SD=13). The most common cancer was breast (20%) followed by lung (9%). Almost all (97%) patients reported at least one of the 9 symptoms assessed at presentation. The most commonly reported severe

symptoms (≥7 on a 0–10 scale) were feeling depressed (16%), lack of well-being (16%), pain (15%), fatigue (14%), anxiety (12%), and lack of appetite (11%). Total symptom distress score (mean 22; SD=17) significantly varied by stage of disease, and performance status but not by sex or age.

Conclusions: This study is among the first to provide a representative view of the prevalence of cancer-related symptoms in this tertiary cancer treatment center in Manila, Philippines. These findings may help inform the development of supportive care services to meet the needs of this understudied cancer population.

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CHARACTERIZATION OF TAXANE-INDUCED ARTHRALGIAS AND MYALGIAS IN BREAST CANCER PATIENTS AT TWO AMBULATORY CANCER CENTRES: A PROSPECTIVE OBSERVATIONAL STUDY

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Objectives: It was our intent to characterize a population of ambulatory breast cancer patients receiving taxane-based chemotherapy for the incidence, severity, description, and duration of both arthralgias and myalgias. Determination of relationships between taxane-induced pain and both patient and treatment characteristics were also planned.

Methods: Breast cancer patients, who were to receive three or more cycles of chemotherapy with paclitaxel, docetaxel, or nab-paclitaxel, were included in the study. Participants were interviewed using a modified Brief Pain Inventory questionnaire, as well as an "Arthralgia/Myalgia Close-Ended Questionnaire", 24–48 hours and five to seven days following each cycle. Patients also completed pain symptom diaries for days one, seven, and 14 following chemotherapy.

Results: Two hundred seventy-five patients (mean age: 52 ±13 years) were accrued at two Canadian ambulatory cancer centres of which, 83.4% received Docetaxel and 78.7% were being treated adjuvantly. The proportion of patients who experienced arthralgias peaked at 67.9%, while those with myalgias peaked at 63.8% over three cycles. At 12 month follow-up, 41.9% and 32.4% of patients still reported having arthralgias and myalgias, respectively. The proportion of patients experiencing these effects significantly differed depending on menopausal status. Nearly 36% of patients indicated interference with activities of daily living.

Conclusions: The incidence of both arthralgias and myalgias in patients receiving taxane-based chemotherapy was shown to be higher than prior reports indicate. Persistence of these effects could occur for several months following completion of chemotherapy. Continued analysis is expected to determine potential relationships between patient, concurrent treatment, and taxane-induced pain characteristics.

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NUTRITION AND FATIGUE RELATIONSHIPS IN ADULT CANCER PATENTS: A COMPARATIVE PATIENT REPORTED OUTCOMES (PRO) STUDY

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Objectives: While nutrition is hypothesized to affect cancer-related fatigue (CRF), it has received little attention. Similarly, patient-reported outcomes on nutrition-related symptoms and CRF rarely are collected in Phase I Cancer Clinical Drug Development Trials because providers rate patient symptoms themselves. The study's primary purpose was to examine relationships among nutrition-related variables and CRF. A secondary purpose was to identify differences in these relationships by clinical setting (outpatients on Phase 1 Cancer Drug Development Trials vs. inpatients). Integrated Fatigue Model components guided this study.

Methods:

Design: Cross-sectional, exploratory analysis. Sample/ Setting: Cancer outpatients and inpatients (n=60) without cognitive impairment (Blessed Orientation Memory Cognition scale) treated at one Southwestern Community-based cancer center.

Measures: Demographic and medical records, the Piper Fatigue Scale-Revised, the 23-item Adapted Symptom Experience Scale and the Geriatric Nutrition Risk Index. Data Analysis: descriptive and correlational statistics (SPSS v.18).

Results: Outpatient data (n=30) have been analyzed thus far. The average participant was a Caucasian married male, 61 years old with stage IV disease; 33% had moderate to severe CRF (≥4-10). Variables correlating significantly with fatigue included: loss of strength (0.39), weight loss (0.40), taste and smell problems (0.37), WBC (0.45), absolute neutrophil count (0.43), total protein (−0.43), potassium (−.58), glucose (0.42) and alkaline phosphatase (0.49).
Conclusions: This study describes, for the very first time, significant correlates among patient-reported CRF and nutrition-related variables and labs in Phase I cancer patients. Additional comparative analyses and study replication are needed.

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ORAL LESIONS ASSOCIATED WITH TYROSINE-KINASE AND MAMMALIAN TARGET OF RAPAMYCIN INHIBITORS IN RENAL CELL CARCINOMA: CASE REPORT AND LITERATURE REVIEW

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Objective: We present an oral mucositis/stomatitis (OM/S) case of a 70 year old female with a history of renal cell carcinoma (RCC) treated with sunitinib and temsirolimus. We review the literature about multi-targeted Tyrosine Kinase Inhibitors/mammalian Target of Rapamycin Inhibitors (TKI/mTORI) related OM/S in advanced or metastatic RCC.
Methods: We present a case and provide personal experiences regarding the management of OM/S. We searched PubMed, Embase and CINAHL for the OM/S and other oral cavity adverse events due to TKI/mTORI.
Results: In contrast to mucosal toxicity associated with cytotoxic chemotherapy, TKI/mTORI associated OM/S may impact function with or without discrete lesions, while being associated with pain, and taste disorders. The lesions associated with TKI/mTORI more closely resemble aphthous stomatitis/aphthous-like ulcerations. The current mucositis assessment tools may have limitations in assessing OM/S in patients on these agents because of the potential for pain with or without lesions and the common lesions presenting as aphthous-like ulcerations. The modified VHNSS2.0 tool may be useful.
Conclusions: OM/S associated with TKI/mTORI therapies is an underestimated but frequent and novel presentation of mucosal adverse events. TKI/mTORI related OM/S may represent a dose-limiting toxicity for this new class of agents, especially considering the fact that even low grades of OM/S with chronic daily dosing may be troubling to the patient, leading to dose reductions. This report serves to heighten awareness of this debilitating phenomenon, and to stress the importance of exercising caution when TKI/mTORI are administered.

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DESCRIBING UNMET SUPPORTIVE CARE NEEDS AND DESIRE FOR ASSISTANCE IN PATIENTS RECEIVING RADIATION TREATMENT

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Patients receiving radiation experience a range of supportive care needs. This project was undertaken to develop a way to systematically identify radiation patients who would benefit from intervention or referral to supportive care.
We designed a self report tool that would allow rapid identification of patient concerns during active radiation treatment. The items are based on the Supportive Care Framework and frequently rated unmet needs. Data were collected on Day 5, 7 and 16 using the new tool and the EORTC QLQ-30 to assess reliability and validity.
115 patients receiving radiation treatment participated. Analysis established the level of agreement between Day 5 (T1) and Day 7 (T2) (test-retest) and Day 1 (T1) and Day 16 (T3) (sensitivity). Kappa coefficients for the domains showed moderate to strong agreement between T1 and T2 (0.48 to 0.92) and a reduced level of agreement between T1 and T3 (0.14 to 0.56). Comparison of the new tool against the EORTC - QLQ-30 provided validity assessment: Pearson Product Correlation coefficients were 0.61 and 0.56. Worry, nervousness, access to information, and fatigue were reported most frequently as concerns at T1 and T2. Worry, fatigue, sleep disturbances, and pain were reported most frequently as concerns by T3. Up to 50% of patients indicated they did not want help with identified concern at each data collection point.
The screening tool provides early identification of supportive care needs. Implementation of this type of tool can assist inter-professional teams in busy ambulatory settings identify patients who could benefit from supportive services.

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HYPOGLYCEMIC EPISODES DURING RAPID METHADONE DOSE ESCALATION

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Treating advance cancer patients, we encountered a few cases when episodes of sedation and severe fatigue, which were initially attributed to methadone overdose, upon further evaluation were found to be caused by profound symptomatic hypoglycemia corrected by administration of dextrose and eventually by tapering methadone dose down. We performed a retrospective chart review of 59 consecutive hospitalized cancer patients who had received methadone while inpatients within a year in an attempt to evaluate a possible relationship between methadone and blood glucose levels. Eleven patients had hypoglycemia while receiving methadone, and of these 2 patients had at least 2 episodes of hypoglycemia. Blood glucose levels were analyzed in relationship to the daily methadone dose (3 days before and 3 days after the episode of hypoglycemia). Use of steroids, non-steroidal medications, fasting, fever, antibiotics, and renal function were recorded. The retrospective chart review revealed that in the 11 patients with recorded hypoglycemia, methadone dose was increased 70% two days prior to the recorded hypoglycemia. None of the other recorded factors predictably affected glucose level in this group of patients. This report documents hypoglycemic episodes in selected patients when methadone dose was significantly escalated during pain flares. An important consideration coming from the presented case reports is that while rapidly increasing methadone dose should the patient exhibit fatigue, agitation or lethargy blood sugar monitoring may be helpful in addition to searching for causes of changes in mental status and increasing fatigue other than opioid overdose.

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ENERGY MANAGEMENT AS A DOMAIN IN A CONCEPTUAL MODEL OF CANCER RELATED FATIGUE (CAF)

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Objectives: An extensive literature has documented that CaF is incapacitating because it directly interferes with cancer patients' ability to function physically and mentally; furthermore, it leads to the rapid deterioration of patients' health-related quality of life (HRQoL). Nearly 50 instruments have been used to measure CaF, most of which rely on some form of HRQoL model that includes among other domains symptoms and function. We present a model of CaF based on data that is specific to fatigue and includes symptoms, impacts on function, and adds a new domain, energy management behaviors.
Methods: During 2009–2010, the Patient-Reported Outcomes of Fatigue in Cancer Consortium conducted 92 in-depth qualitative interviews with patients with cancer, varying in type (breast, prostate, lung, colorectal, myeloma, renal cell, ovarian, and pancreatic; stage (I -IV); recurring disease vs. first diagnosis, gender, age (35–92), ethnicity, and education level. Grounded theory data collection and analysis methods were used.
Results: Patients reported 3 behaviors that mitigated the impact of CaF symptom severity on functioning and secondary symptoms: short rest breaks (n=71%), pushing (n=51%), and pacing oneself (n=33%). This allowed patients to use available energy levels, preserve energy for important activities, and restore energy levels that were depleted.
Conclusion: Inclusion of these energy management behaviors as part of a CaF measurement strategy would greatly facilitate the interpretation of the severity of symptoms and their effects. Hypotheses from the pathophysiology of fatigue literature are used to suggest the link between the behaviors, the reported severity of symptoms, and resultant impact on function.

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RADIATION DOSAGES TO THE MANDIBLE FOLLOWING INTENSITY-MODULATED RADIATION THERAPY

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Intensity-modulated radiation therapy (IMRT) is an effective modality for treatment of head and neck cancer. IMRT generates dose distributions that conform to targets while minimizing dosages to normal tissues. Osteoradionecrosis is a significant complication of radiation therapy. With IMRT's complex multi-beam delivery, clinicians planning dental extractions are faced with difficulty in determining dosages delivered to the mandible. We examined doses delivered to specific mandibular regions and present our preliminary data from 20 patients with base of tongue cancer treated at Memorial Sloan-Kettering Cancer Center. A total of 20 patients with T1/2-N2/3 (n=10) and T3/4-N2/3 (n=10) lesions were selected. For each patient, five areas of the mandible (right and left molar and premolar and anterior) were contoured in their entire height using CT

images and MSKCC planning software. Mean and maximum volume doses for each defined region were calculated. For T1/2 patients, maximum values of >5000 cGy were seen for bilateral molars irrespective of tumor side. Lower doses were seen for premolars and anteriors. Mean values followed a similar pattern with molars receiving >3500 cGy and less in premolar and anterior regions. For T3/4 patients, maximum values of >5000 cGy were seen for the entire mandible irrespective of tumor side. Mean values followed a similar pattern with doses of >3500 cGy. In most patients, larger doses were seen with bilateral neck metastasis.
In dental treatment planning, it is important to consider tumor size and local metastasis. Our findings indicate that in advanced disease, the contralateral mandible is not always spared.

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FEASIBILITY OF DOCUMENTING PATIENT-REPORTED OUTCOMES AFTER CANCER TREATMENT USING AN INTERNET-BASED TOOL

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Introduction: Cancer survivors may experience myriad late effects. This study reports on the feasibility of an Internet-based tool for collecting patient-reported outcomes after cancer treatment.
Methods: We launched and made publically available an Internet tool for creation of survivorship care plans in 2007. Available at www.livestrongcareplan.com or the *OncoLink* website, it provides customized guidelines for survivorship. In 2009, a series of late effects queries was added. Care plans are tailored according to individually-reported late effects.
Results: Of 140 possible queries regarding late effects, each user is posed between 5 and 30 according to treatments received. Answer response options to most queries are "yes," "no," & "I don't know." Survivors reporting erectile dysfunction, urinary incontinence, and chronic diarrhea are asked to grade late effects according to modified standardized scales. Breast cancer survivors are also asked to rate cosmesis of the treated breast. Overall, 3222 cancer survivors have provided data regarding late effects after treatment. Users are 74% Female and 87% Caucasian. Median diagnosis age is 48 years and median current age 52. The most common diagnoses are breast (45%), hematologic (11%), and gastrointestinal (10%) cancer. Median time to complete the plan and late-effect queries was 7:18. Survivors report good to excellent experience using this tool in 95% of cases.
Conclusions: Cancer survivors appear very willing to report late effects via this Internet-based tool. Based on preliminary data, this represents a novel way to improve awareness of survivor-reported outcomes, as well as to disseminate useful information to cancer survivors.

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BUILDING CAPACITY FOR CHEMOTHERAPY DELIVERY IN KENYA

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The world wide incidence of cancer is anticipated to increase substantially over the next decade. Seventy percent of the new cancer cases will be in countries with middle to low resources. Preparing to deal with this challenge requires access to cancer education. However, this access remains difficult. This project was undertaken to begin building capacity in Kenya for the delivery of chemotherapy through locally tailored education.
A five day course was designed as an introduction to administering chemotherapy for nurses. Two courses have been offered (Nairobi, N=70 participants; Eldoret, N=32 participants). The course combined didactic and practical approaches with a variety of learning experiences. Data were gathered before, during, and after the courses to assess attitudes, knowledge, and practice change.
Participants evaluated the program positively and indicated they felt an increased level of confidence about their work. Knowledge scores increased by the end of the course. Some students instituted practice changes in their clinical settings following the course, particularly for personal protective equipment use. Some had challenges in sharing the new knowledge with colleagues because of little available time and lack of openness by administration.
Success in educational programming is dependent upon tailoring the teaching approaches to the local environment. This tailoring demands a collaborative partnership with health professionals working in the local clinical setting. The lessons learned during the organizing and delivering of this course will be of interest to other agencies interested in similar initiatives.

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COGNITIVE-EXISTENTIAL INTERVENTION TO ADDRESS FEAR OF RECURRENCE IN WOMEN WITH CANCER

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Objectives: The objectives of the study are to develop, describe, standardize and conduct preliminary testing of a cognitive-existential group intervention that addresses fear of cancer recurrence in women with breast cancer and to promote optimal coping and screening behaviors. Despite evidence that fear of cancer recurrence is highly prevalent among survivors, little evidence exists that these problems are being address by current medical management. It is hypothesized that a group intervention geared towards addressing fear of recurrence will enhance quality of life, psychosocial functioning and promote optimal screening practices.
Methods: A single-arm pilot study is used to recruit 40 women (6 groups of 6–8) with a breast cancer diagnosis from two sites, the Breast Cancer Survivorship Program at Toronto, Canada and the Ottawa Hospital Cancer Department in Ottawa, Canada. Data will be analyzed to describe and examine change in fear of recurrence, psychological functioning, and screening behaviors and to examine predictors of change in fear of recurrence.
Results: The study is ongoing. Currently we have our first focus group composed of 8 women undergoing our intervention. We will be presenting the preliminary results from these groups.
Conclusions: The findings from this study will contribute to our understanding of how fear of cancer recurrence can be managed so that its disruptive effects on individuals quality of life can be minimized.

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PROTECTIVE EFFECTS OF SPIRITUALITY AND RELIGIOSITY IN UNDERSERVED WOMEN WITH CERVICAL CANCER (CXCA)

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Objective: To describe spirituality and religiosity in women diagnosed with CxCa.
Methods: Newly diagnosed CxCa patients completed surveys for quality of life (QOL) (FACT-CX), spirituality (FACT-SP);death anxiety (DA);religiosity (HOGE intrinsic religiosity (IR); and DUREL).
Results: 92 pts enrolled;median age=45 yrs.
Group1 = FIGO Stage 1A1-1B1 (n=17);
Group2 = Stage IB2-IIB (n=47);
Group3 = Stage IIIa-IV (n=28).
27% = African American, 56% = Hispanic, 16% = White. Overall QOL and spirituality were better for Group1 (FACT-CX,p=.01;FACT-SP,p=.05), especially for physical well-being (p=.02) and issues related to CxCa(p=.001). AA pts reported the highest emotional well-being (p=.008). AA pts in Group3 reported the best QOL compared to other pts. AA pts expressed the most IR compared to H and W(p=0.01) and all pts expressed a high index of religiosity by DUREL. Interestingly, AA pts in Group2 had the highest IR; AA pts in Group3 had the 2nd highest. AA reported lowest levels of DA compared with W or H. (p=.05). AA pts in Group2 had the lowest overall anxiety; AA pts in Group3 reported the 2nd lowest. Compared to other pts, Group2 reported the best spiritually-related QOL (p=.03). QOL was positively correlated with religious attendance (r=.30; p=.009) and FACT-SP (r=.40; p=.001), and inversely correlated with DA (r=−.25; p=.03).
Conclusion: Religiosity is highly prevalent in CxCa pts in medically-underserved settings. QOL correlates with CxCa stage, however, for individuals, QOL is positively correlated with meaning/peace aspect of spirituality, IR, religious attendance and inversely correlated with death anxiety. This is especially prevalent in AA populations, where even with advanced disease, QOL was still superior to other groups.

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RAPID IDENTIFICATION OF UNMET SUPPORTIVE CARE NEEDS

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Cancer has more than a physical impact. There are also emotional, psychosocial, spiritual and practical consequences. Patient satisfaction surveys and standardized needs assessments have shown that significant numbers of patients experience unmet supportive care needs. Concrete strategies are necessary in busy clinical setting to systematically identify symptom and psychosocial concerns.
A programmatic approach to screening for symptoms and emotional distress was implemented at our cancer centre. The program is designed to acknowledge and meet the full range of patient concerns in a timely fashion by using a combination of an easily administered self report triage (or screening) tool together with algorithms for clinical assessment, intervention and referral. Algorithms are crafted from evidence-based practice guidelines and focus on inter-professional care delivery.
Screening is underway in our lung, palliative, gynecology, and breast cancer clinics. Data from staff and patients indicate that the desired outcomes can be achieved: the patient perspective is the starting point for care planning; the full range of supportive care needs are acknowledged; referral to expert supportive care services is timely and

appropriate; the inter-professional team is working collaboratively to tailor patient care.
Implementation of a programmatic approach to screening for symptoms and emotional distress has resulted in our learning significant lessons about undertaking this type of work. The lessons could be of value to other cancer centres with an interest in implementing similar approaches for rapidly identifying patients with unmet supportive care needs.

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DERMATOLOGIC ADVERSE EVENTS (AES) WITH AKT (GSK2141795), PI3K (A, B, Γ, Δ) AND MTORC1/2 (GSK2126458) AND MEK (GSK1120212) + AKT INHIBITORS

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Objectives: Papulopustular (acneiform) rash occurs in >75% of patients (pts) treated with Epidermal Growth Factor Receptor (EGFR) and MEK inhibitors, often leading to considerable patient discomfort and poor drug compliance. However, little is known about dermatologic AEs with inhibitors of the PI3K/Akt/mTOR pathways. We report interim results on cutaneous AEs for three investigational inhibitors in Phase I studies.
Methods: 167 patients were evaluable for dermatologic AEs in three Phase I trials: GSK2141795 (n=66), GSK2126458 (n=78), or a combination GSK1120212 and GSK2141795 (n=23). AE grading was performed using CTCAE v3 or v4 by investigators and selected cases were referred to dermatologists based on severity. Histopathological analysis was performed for 3 patients treated with GSK2141795.
Results: Overall, rash occurred in 17% (AKT inhibitor), 5% (PI3K inhibitor) and 22% (AKT + MEK inhibitors) of pts, predominantly Grade 1. A maculopapular rash was the most common presentation for single agent PI3K/Akt/mTOR pathway inhibitors, whereas combining GSK2141795 with the MEK inhibitor GSK1120212 resulted in a papulopustular (acneiform) phenotype as well, concordant with EGFR inhibitor rash. Biopsies from GSK2141795 treated patients (n=3) showed a non-specific infiltrate of lymphocytes and eosinophils with vessel damage. Additional biopsies are under evaluation. Treatment with oral and topical steroids and antibiotics +/− occasional dose interruptions allowed for continued dosing.
Conclusions: Rash associated with inhibitors of PI3K/Akt/mTOR pathways are manageable, and clinically different from EGFR/MEK inhibitor induced rash. Most rashes were Grade 1 or 2, responded well to steroids and antibiotics and were reversible. Further characterization is ongoing in trials.

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SCREENING FOR DISTRESS (6TH VITAL SIGN): THE CANADIAN EXPERIENCE

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Screening for distress as the 6th vital sign is a proactive, rapid identification of selected indicators that allow clinicians to determine if further assessment and/or referral is necessary. By implementing a programmatic approach to screening for distress, timely and appropriate assessment and access to supportive care can be enhanced.
The Cancer Journey Action Group of the Canadian Partnership Against Cancer has implemented a programmatic approach to screening for distress in four jurisdictions across Canada. These demonstration projects have used a self report screening tool, algorithms for assessment and intervention, and evidence-based practice guidelines. The work focuses on inter-professional team work for person-centered care.
The projects started one year ago and are identifying key lessons for future implementation. The four jurisdictions are using a common evaluation framework to gather data about screening, program progression, education needs, inter-professional teamwork, and person-centered outcomes. Key lessons include: having a clear vision, education is critical, senior management support is vital, and cultural change requires long term effort.
Screening for Distress (6th Vital Sign) is an approach that will augment a cancer program's ability to acknowledge and attend to the full range of supportive care needs experienced by cancer patients. Implementing a programmatic approach is important so that screening is not just focused on completing a form. Appropriate assessments need to occur with patients after they complete a screening instrument, followed by appropriate subsequent activity, if the approach is to achieve success.

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YOCAS® YOGA SIGNIFICANTLY IMPROVES CIRCADIAN RHYTHM, ANXIETY, MOOD AND SLEEP: A RANDOMIZED, CONTROLLED CLINICAL TRIAL AMONG 410 CANCER SURVIVORS

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Objectives: We conducted a nationwide, multi-site, phase III randomized, controlled, clinical trial examining the efficacy of yoga for improving circadian rhythm, anxiety, mood and sleep among cancer survivors.
Methods: Cancer survivors with non-metastatic disease, between 2–24 months post adjuvant therapy who reported no participation in yoga during the prior 3 months were randomized into 2 arms:
1) standard care, and
2) standard care plus the 4-week (wk) yoga intervention (2 x's/wk; 75 min./session).
The yoga intervention utilized the UR Yoga for Cancer Survivors (YOCAS®) program consisting of pranayama, asanas and meditation. Circadian rhythm, anxiety, mood and sleep were assessed pre- and post-intervention.
Results: 410 survivors were accrued (96% female, mean age=54, 75% breast cancer). Multi-oscillator modeling revealed a 12-hour, ultradian rhythm model fit the circadian rhythm and demonstrated significant rhythm differences between groups post-intervention ($p<0.05$) with a more favorable rhythm in the yoga group. ANCOVAs showed a lower 24-hour amplitude and a delayed 12-hour acrophase in the yoga group (all $p<0.05$). ANCOVAs revealed significant differences between groups on anxiety, mood and sleep ($p<0.05$) with yoga participants demonstrating greater improvements in anxiety (CS=−0.80, SE=0.21), mood (CS=−6.7, SE=1.08) and sleep (CS=1.96, SE=0.25) from pre- to post-intervention compared to controls (anxiety CS=−0.20, SE=0.24; mood CS=−1.6, SE=0.96; sleep CS=1.07, SE=0.23).
Conclusions: The brief community-based YOCAS® intervention favorably alters circadian rhythm and improves anxiety, mood and sleep among survivors. Clinicians should consider prescribing the YOCAS® program for survivors reporting anxiety, mood and sleep disorders.
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THE PERFORMANCE OF THE AGE-ADJUSTED SOFA SCORE PREDICTING MORTALITY IN MEDICAL PATIENTS WITH CANCER ADMITTED TO THE ICU

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Introduction: The SOFA score is widely used to evaluate the severity of illness of critically ill patients and its performance in cancer patients has not been described. We aimed to determine the performance of the SOFA score calculated at admission and adjusted by age to predict the status at discharge from the ICU of medical patients in a Comprehensive Cancer Center.
Methods: We conducted a retrospective study of ICU discharges between Jan 1, 2006 and Dec 31, 2008. We randomly selected training (80%) and validation (20%) samples. By using the age adjusted logistic regression model from the training sample we computed the probabilities of death in the validation sample and calculated the Hosmer and Lemeshow (H-L) test. We constructed a receiver operating characteristics (ROC) curve and calculated the area under the curve (AUC).
Results: We included 2609 patients, 59% were men. The mean (median) age was 57.9 (60) years and the mean SOFA score at admission were 7. After calculating the age adjusted SOFA probabilities of death in the cases of the validation sample, the H-L test obtained was Chi2=11, df=8, $p=0.20$. The AUC under of the ROC curve was 0.78 (95% Confidence Interval [CI], 0.74–0.82).
Conclusions: The age adjusted SOFA score had a satisfactory performance to predict ICU mortality in patients with cancer admitted to the medical ICU sugesting it could be used as a measure of risk adjustment in clinical audits and trials.

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KNOWLEDGE AND ATTITUDE OF IRANIAN GENERAL PRACTITIONERS ABOUT PALLIATIVE AND SUPPORTIVE CARE

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Background: General Practitioners (GPs) have the main responsibility in medical and particularly palliative care provision in most of countries, though this is not the current case in Iran. Development of 'family physician' approach in rural and most of the urban areas in Iran, GPs will have the main role in care provision. There is no formal palliative care education during general medical training in the country so far. Regarding the increasing number of people in need of palliative care services, it is essential to assess GPs' knowledge about palliative care to develop special palliative care educational programmes.
Method: A cross-sectional questionnaire survey was conducted on general practitioners participated in a formal Continuous Medical Education programme, using three scales.
Results: 216 GPs returned the completed questionnaires. More than half scored their knowledge about palliative

care as weak, which was significantly related to their previous experience in caring of a terminally ill patient ($p=0.001$). Less than one third stated their good ability to either assess or manage pain in end of life. Major gender differences were seen in different subscales such as communication with patients and carers, patient management, palliative care knowledge and skills, and psychological stress.

Conclusion: This study revealed a profound lack of knowledge and experience among Iranian general practitioners about palliative care which was mostly in more complicated areas rather than common symptoms relief.

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ARE OUR PATIENTS GOING HUNGRY?

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Background: Food insecurity, a disruption in a household's eating habits due to insufficient food resources, is a growing problem in the U.S., where 17.4 million households are food insecure. It is especially detrimental to oncology patients. No studies have yet assessed food insecurity levels among oncology patients in major population centers. This study estimates the prevalence and predictors of food insecurity among a cohort of medically underserved oncology patients.

Methods: Demographic background, diagnosis and treatment information, and responses to the USDA Household Food Security Survey Module were collected and analyzed for a sample of 411 patients with a clinical cancer diagnosis who were in care at 10 hospitals in New York, NY. Food insecurity status was defined according to USDA guidelines, by the number of reported food insecure conditions and behaviors in the USDA Household Food Security Survey Module.

Results: The prevalence of food insecurity was 55%, with low and very low food security rates of 45% and 10%, respectively. Food insecure patients were more likely to be younger than food secure patients, and have worse access to health care.

Conclusions: This cohort of predominantly immigrant and minority cancer patients had rates of food insecurity nearly 5 times higher than the state average. More research is needed to better understand the causes and impact of food insecurity among cancer and other patients with severe and chronic illnesses. Food insecurity screening should be considered as a component of the standard of care for all cancer and chronic disease patients.

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DOCTOR, WHAT DO I HAVE? LIMITED ENGLISH PROFICIENT PATIENTS AND CANCER DIAGNOSIS KNOWLEDGE

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Background: Incorrect knowledge of cancer diagnosis can hinder treatment. Immigrant minorities and the underserved face barriers to understanding cancer diagnoses, including language, culture, and health literacy. This study investigates knowledge of cancer diagnosis among immigrant minorities.

Methods: Patients were recruited at ten hospital-based cancer clinics in New York City between September 2008 and December 2010. Demographic and self-reported diagnosis and treatment information were collected by bilingual staff from 471 patients. Charts were reviewed to ascertain cancer diagnosis.

Results: 92% of patients were foreign-born. 81% preferred to speak a language other than English for health care. 64% of foreign-born patients had resided in the US for 15 years or less. 60% did not have a primary care provider, and 84% did not have a social worker assisting them. The most common cancer diagnoses were breast (28%), colorectal (9%), cervical (8%), and lung (7%). 14% had incorrect knowledge of their cancer diagnosis. An additional 6 participants reported the correct metastatic site, but wrong primary cancer, or correct site, but wrong type of cancer. Of the 68 patients with incorrect diagnosis knowledge, 91% preferred a non-English language for health care.

Conclusions: Among this cohort of predominantly immigrant cancer patients, a considerable proportion were unaware of their correct cancer diagnoses. This may have a significant impact on subsequent cancer treatment and care. Language discordance likely has an important role. More research is needed to better understand cancer care in the language discordant encounter.

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PROFILING PRE-CACHEXIA, CACHEXIA AND REFRACTORY CACHEXIA IN PALLIATIVE CARE: RESULTS FROM THE NUTRITION AND PERFORMANCE IN ADVANCED CANCER TRIAL (NPACT)

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A recent international consensus has agreed to classify cancer cachexia into three stages: pre-cachexia, cachexia and refractory cachexia (Fearon et al 2011). In order to validate the clinical relevance of this classification, we used the data from our ongoing Nutrition and Performance in Advanced Cancer Trial (NPACT). This trial aims to improve the early detection, monitoring, and management of cancer cachexia in palliative care. Thirty-one advanced cancer patients with anorexia and/or weight loss were recruited from the palliative care day hospital of the McGill University Health Centre. These patients were classified according to the abridged PGSGA (weight loss/past 6 months, box 4 performance status) ESAS (anorexia scale), DXA (sarcopenia) and CRP levels. For clinical profiling, we assessed muscle strength (handgrip and BIODEX), nutritional status (food recall, DXA and Bio-impedence spectroscopy), self reported pain, sleep quality, strength and depression (ESAS) in all participants. The majority of patients (n=17, 53%) were classified as cachectic, five (15%) were at a refractory stage of cachexia, two (6%) were pre-cachectic, two (6%) were sarcopenic and five patients (15%) could not be classified into the above categories. Our preliminary data indicate a lower ($p=0.02$) muscle strength in both cachectic and refractory cachectic patients as compared to the non-cachectic ones. Patients with refractory cachexia had also lower ($p=0.03$) quality of sleep as compared to the non-cachectic group.

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CLUES TO TOTAL PAIN: A PILOT OBSERVATION

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Introduction: Total Pain is the condition first described by Dame Cicely Saunders in which a patient's psychosocial-spiritual distress is expressed in terms of physical symptoms, usually pain. Total Pain is difficult to recognize and treat but is supported by medical literature that describes the multidimensional nature of pain and the bio-psychosocial-spiritual model. Terms such as "total suffering" and "somatization" have been used to describe this conditionand are linked to the related condition alexithymia. Identifying such individuals helps to direct therapy toward the underlying psychosocial distress. This is difficult as no objective criteria exist on which to make this diagnosis. Careful observation especially attentive to incongruent or inconsistent behaviors is the basis for recognition of Total Pain. To date descriptions relating these types of behaviors have been lacking.

Objective: To report patient behaviors and clinical senarios that may assist in the diagnosis of Total Pain and lead to further research.

Methods: Observational, empiric findings expressed repeatedly by patients diagnosed with Total Pain were collated from individuals admitted to an Acute Inpatient Palliative Care Unit.

Results: A number of characteristic observable behaviors are described with further commentary.

Conclusions: These observations may help Palliative Care teams to correctly recognize Total Pain and assist research in this area.

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SOUTH ASIAN WOMEN'S PERCEPTIONS OF THE CONTENT OF THE SURVIVORSHIP CARE PLAN

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Objectives: To explore experiences and concerns of South Asian (SA) breast cancer survivors at different life stages to determine their understanding of follow-up cancer care.

Methods: Qualitative ethnographic approach was used to interview twenty-four women ranging from 30–72 years old, who were 3–60 months post-treatment, had non-metastatic breast cancer, and discharged from cancer agency.

Results: Fatigue, fear of the unknown, and womens' need to normalize post-treatment were the most universal effects of cancer treatment. Most SA women experienced deepening of faith and felt that the cancer diagnoses was part of their *karma (fate)* a part of the journey of life. Emphasis on generalized survivorship care plan (SCP) with individualized content echoes the wide variation in breast cancer impact for women; however SA women preferred information on depression, and peer support. Important elements included: treatment summary, information on exercise, expected side effects, follow-up schedule, and knowledge of information sent to family physician. Language specific written booklet was the preferred format for SCP. Consultation at beginning of treatment with an oncology nurse was felt to be ideal.

Conclusion: While many of the psychological and physical impacts of breast cancer diagnosis and treatment maybe common with all ethnic backgrounds, this study suggested

unique cultural nuances that include spiritual and support resource needs of SA breast cancer survivors. Content of SCP in relation to the treatment summary and expected side effects is more generalized; however SA women voiced the need for an individualized SCP that will address their personal needs of follow-up care plan.

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WAS IT WORTH IT (WIWI)? MEASURING PATIENT SATISFACTION WITH CLINICAL TRIAL PARTICIPATION

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Background: Roughly 5% of eligible adult cancer patients enter oncology clinical trials. Assessing whether patients judge their clinical trial experience as beneficial may provide insights for accrual barriers and inform future trial design.
Methods: Patients in a phase III colon cancer study (N0147) received FOLFOX alone or with Cetuximab and completed A 5-item "Was It Worth It" (WIWI) patient questionnaire at treatment discontinuation. Comparisons between groups were carried out via Fisher's exact tests.
Results: The majority of 1,081 patients said trial participation was worth it (95%), would do it again (90%), would recommend it to other people (95%), and that their QOL was improved by going on trial (65%). Over one third of patients (37%) said their satisfaction was not related to treatment outcome. Patients treated with Cmab were less likely to say participation was worth it ($P<0.01$) and more likely to say their satisfaction was related to treatment outcome ($P<0.05$). Elderly patients were less likely to say trial participation was worth it ($P<0.02$), would do it again ($P<0.004$) and would recommend it ($p<0.005$). FOLFOX-treated elderly patients were more likely to report that their satisfaction was related to their outcome ($p=0.0001$).
Conclusions: Patients treated with Cmab and elderly patients indicated lower levels of satisfaction, due likely to the increased toxicity related to the Cmab treatment. Contrary to popular belief, patient satisfaction was not related to treatment outcome. The WIWI measure is a sensitive measure for assessing patient satisfaction with clinical trial participation.

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RECENT ADVANCES IN THE GENETIC UNDERPINNINGS OF QOL FROM THE GENEQOL CONSORTIUM

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Background: There is emerging evidence for a genetic basis of quality of life (QOL). However, research into the direct associations between QL outcomes and genes is sparse. This abstract reports three different confirmatory studies exploring suggested biochemical pathways linked to QOL domains from a review of the literature published by the GENEQOL consortium (Sprangers, 2010).
Methods: This session will present each of the three studies with 2294 patients with advanced cancer, 1149 lung cancer patients, and 854 colorectal cancer patients respectively. Univariate regression analyses were conducted between QL scale scores and SNPs, using Bonferroni corrections, and controlling for covariates. Canonical correlation analysis of the QL scores and the SNPs was performed with an elastic net penalty to account for the multicollinearity among the SNPs.
Results: Data from the three studies indicate relationships between genetic polymorphisms and QOL domains demonstrating:
1) the importance of the inflammatory pathways for cytokines as a contributing factor to overall QOL and fatigue;
2) the importance of the COMT opium expression pathways for pain, fatigue and dyspnea
3) the TYMS/DPYD cell structural pathway for fatigue and overall QOL.
Conclusions: These findings indicate that genetic pathways for QOL domains theorized by the GENEQOL consortium roughly one year ago have been successfully validated by these replication studies..

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THE ACUTE EFFECT OF PALONOSETRON ON ECG PARAMETERS IN CANCER PATIENTS: A PROSPECTİVE STUDY

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Objectives: The 5-hydroxytryptamine 3 receptor antagonists are used for the prevention and treatment of chemotherapy and radiotherapy-induced emesis. Despite their effectiveness and safety profile, it was reported in many studies that they may cause electrocardiographic changes related to heart rate and repolarization. The purpose of this study is to determine acute influence of palonosetron on ECG parameters in cancer patients.

Materials and methods: Fortyseven cancer patients with normal cardiac function who received palonosetron for the prevention of chemotherapy induced emesis were enrolled into this prospective study. Standard 12-lead ECG recordings were performed at baseline and 30 min after palonosetron administration. P wave durations and corrected QT intervals were measured; P wave dispersion (Pd) and QTc dispersion were calculated.
Results: In comparison with baseline, no statistically significant change in any ECG parameters, including QT and RR intervals, P wave durations, Pd and QTd, was observed after infusion of Palonosetron.
Conclusion: In this study palonosetron did not show any ventricular and atrial arrhythmogenic effect because of repolarization abnormalities

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INVESTIGATION INTO THE "NURSING PRESENCE INTERVENTION MODEL"

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This study investigated the usefulness of the "nursing presence intervention model," a model for the care of terminally ill patients and their family members in palliative care/at general hospitals. "Nursing presence" is defined as "being with patients that is characterized by understanding deeply the patient's suffering and helping to find ways to relieve it." The model's three components are the intervention goal, interventional methods, and outcomes. These components were based on previous interview data of patients, family members and nurses in palliative care/at general hospitals. The subjects were 2 nurses in a palliative care setting and 3 nurses in a general hospital setting (ages 26 to 40 years: avg. of 32.2 years). After written informed consent was obtained from the subjects, they used the model to draft plans for the nursing of terminally ill patients. The subjects intervened according to the model for seven patients for approximately six months. Afterwards, a semi-structured interview was conducted to investigate the subjects' views on the usefulness of the model, the way they took care of patients using the model, and their emotions, feelings and conflicts about giving care. Content analysis was used to examine the data. The intervention goal was found to be useful for nurses in the assessment of patients' understanding of their suffering and their beliefs regarding suffering. The outcomes were found to be useful in giving patients a new perspective on their suffering, enabling them to understand that their suffering can be relieved.

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QUALITY OF LIFE IN PATIENTS WITH MALIGN GLIOMA: A PROSPECTIVE STUDY IN TURKISH POPULATION

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Purpose: We aimed to assess quality of life, cognitive and emotional distress on patients with diagnosis of high grade glioma.
Methods and materials: 118 patients with the diagnosis of high grade glioma evaluated prospectively between September 2006-March 2009. Quality of life, cognitive function and emotional distress were assessed with the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire 30 (EORTC-C30), Brain Cancer Module-20 (BN-20), Mini Mental Standard Examination (MMSE) and Hospital Anxiety and Depression Scale (HADS) respectively. The tests were administered after surgery before radiotherapy (baseline scores), at the end of radiotherapy and then 1,6,12,18,24 and 30 months after radiotherapy. However baseline scores, the scores taken at the end of the radiotherapy and first 18 months follow-up period scores were included to statistical analysis.
Results: Out of 118, 69 of the patients (58.5%) had WHO grade IV disease, 37 of them (31.3%) had WHO grade III and 12 of them (10.2%) had high grade glioma diagnosis without further grading. With the median follow-up of 209.5 (21–886) days, 65 of our patients (55.1%) had progressive tumor. There were many changes about parameters related to both quality of life and cognitive functions compared to baseline scores and follow-up scores. Most of them were found to be related to disease progression. We did not observe any depression and anxiety in our patients.
Conclusions: Both disease progression and treatments effect health related quality of life in high grade glioma patients. But we need further follow-up to reach exact results.

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RADIATION INDUCES CYTOKINES AND MMP-1, TIMP-1 AND SUPPRESSES TYPE I COLLAGEN MRNA EXPRESSIONS IN HUMAN GINGIVAL FIBROBLASTS

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Objectives: In this study, we aimed to elucidate the effects of radiation on the proliferation of gingival fibroblasts and proinflammatory cytokines and matrix metalloproteinase-1 (MMP-1), tissue inhibitor of matrix metalloproteinase-1 (TIMP-1) and type I collagen (COL I) mRNA expressions of gingival fibroblasts.
Materials and methods: Gingival fibroblasts were treated with radiation dosages as follows; control group (untreated), 0.5 Gy, 1 Gy, 2 Gy, 4 Gy, 6 Gy, and 8 Gy. Expression of interleukin (IL)-1 beta, IL-6, IL-8 and MMP-1, TIMP-1 transcripts in HGFs was determined by quantitative PCR (QPCR) analysis. Morphology of gingival fibroblasts was evaluated using inverted microscope after different dosages of radiation. One-way analysis of variance (ANOVA) and Tukey HSD multiple comparison tests were used for statistical analysis.
Results: Radiation decreased cell proliferation ($p<0.05$) compared to the control group. Expression of IL1beta, IL-6 and IL-8 was stimulated at higher dosage (8 Gy) of radiation ($p<0.001$). In parallel, MMP-1, and TIMP-1 mRNA expressions were elevated in response to highest dosage of radiation ($p<0.001$). Radiation suppressed COL I mRNA expression in response to all dosages at 24 hrs ($p<0.001$).
Conclusion: Results of this study may clarify the possible mechanisms of radiation induced oral mucositis in cancer patients.

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EVALUATION THE MODEL OF COMPREHENSIVE DISCHARGE PLANNING ON ADAPTATIONAL OUTCOMES IN THAI RADICAL PROSTATECTOMY

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Objectives: To evaluate the model of comprehensive discharge planning for Thai prostate cancer on adaptational outcomes.
Methods: Patient sample consisted of 40 patients (Controls: 20 patients and Study Group:20 patients) who were admitted in acute care setting. A routine clinic patient care was administered in the control group whilst a clinical care pathway (CCP) for discharge program in the study group. As data collection instruments: patient data, Stress Appraisal Interview guide, Adaptational outcomes scale, Discharge process checklist, Discharge outcome checklist were used to collect the data. Student-t, Paired-t was used for the statistical analysis of the data.
Results: Ages, sex, education status, concern and information needs during hospitalize were found to be similar between two groups. Readmission found one case from control group. The average length of stay 5–15 days. Stress level in the study group show lower than in control group during hospital and before discharge but both group have higher stress level at 1 month after discharge. A statistically significant differences was detected between the scores of social functioning, morale and somatic health adaptational outcomes ($p<0.05$).
Conclusion: It is possible to successfully model of comprehensive discharge planning, multidisciplinary team approach, to enhance adaptational outcomes in Thai prostate cancer. But the clinical care pathway (CCP) should be evaluate and re-design to reduce length of stay and cost of radical prostatectomy without subjecting the patient to a greater risk of complication.

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COST SAVINGS WITH FERRIC CARBOXYMALTOSE IN CHEMOTHERAPY-INDUCED FERRIPRIVE ANEMIA OF BREAST AND GASTROINTESTINAL CANCERS: FRENCH HEALTHCARE PAYER PERSPECTIVE

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Objective: To evaluate the economic impact of intravenous iron (ferric carboxymaltose: Ferinject®) in chemotherapy-induced anemia (CIA) in breast and gastrointestinal cancers.
Methods: We developed an economic model which compared the usual therapeutic strategies of CIA combining

or not intravenous (IV) iron. Costs related to anemia treatment were estimated and compared. Cost savings were calculated from the French healthcare payer perspective. Impact of Ferinject® on the decrease of ESA usage and the number of blood transfusions at hospital was evaluated.
Results: Based on the estimated decrease of 25% of ESA dosing when administered with Ferinject®, and a decrease of 10% of patients receiving ESA after chemotherapy (expert opinion), the most prominent annual cost savings were observed in CIA of breast cancer (€881 and €319 per patient for metastatic and non-metastatic breast cancers, respectively); global cost saving is estimated to €29 millions. Regarding blood transfusion the cost saving is estimated to €1.6 millions. The annual cost saving on the decrease of ESA dosing in gastrointestinal cancers is estimated to €6.6 millions. Analysis showed that strategies including intravenous iron remained cost-effective even with wide variations in the assumptions.
Conclusion: Recent guidelines recommend evaluating the iron deficiency and to correct anemia by using IV iron*. Anemia is a clinically important and sometimes dose-limiting complication of cancer therapy. It has a real impact on quality of life, overall survival and economics**. Our analysis showed that compared to usual therapeutic strategies, IV iron appears to be significantly cost saving in the treatment of CIA.

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IMPROVEMENT OF PAINFUL BORTEZOMIB-INDUCED PERIPHERAL NEUROPATHY FOLLOWING ACUPUNCTURE TREATMENT IN A CASE SERIES OF MULTIPLE MYELOMA PATIENTS

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Background: Peripheral neuropathy is a common and severe dose-limiting side effect of the chemotherapy agent, bortezomib, in multiple myeloma (MM) patients. Treatment with narcotics, antidepressants, and anticonvulsants has limited response and the potential for significant side effects. Acupuncture has been reported to be effective in treating neuropathic pain. There has been no reporting on the effect of acupuncture in treating bortezomib-induced peripheral neuropathy (BIPN). Here we report a case series of using acupuncture to relieve painful BIPN.
Methods: We report the result of a retrospective case series of five MM patients suffering from painful BIPN. Three patients were assessed for severity of BIPN using 0–10 numeric pain scale and the other two were assessed using Clinical Total Neuropathy Score, Functional Assessment of Cancer Therapy/Gynecologic Oncology Group-Neurotoxicity questionnaire or Neuropathy Pain Scale. Acupuncture was planned on a weekly basis with adjustment based on response.
Results: Five MM patients (3 male, 2 female, age range: 36–57) with moderate to severe BIPN (1 grade 2, 3 grade 3 and 1 grade 4) that received acupuncture treatment for BIPN were included in this study. All patients were African American patients. All five patients experienced immediate pain relief after acupuncture treatment. Two of three patients who had more than four acupuncture treatments experienced long lasting pain relief and improvement of function. There were no adverse events associated with the acupuncture treatment.
Conclusions: Acupuncture is a viable treatment option for MM patients experiencing painful BIPN. Further studies on acupuncture for BIPN symptoms are needed.

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ANALYSIS OF TOXIC COMPLICATIONS OF CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA TREATED IN VOIVODSHIP SPECIALIST CHILDREN HOSPITAL IN OLSZTYN

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Considerable progress in children's treatment with acute lymphoblastic leukemia (ALL) is connected with intensive antineoplastic treatment introduced during the last 30 years. With growth of intensity of chemotherapy and radiotherapy we observed more frequent occurrence of early and late toxic symptoms. The aim of work: Analysis of toxic complications of children with ALL. Patients and method: A total number of 113 children aged 1,1-17,8 years (median age 5.5 years) were diagnosed for ALL in Children Hospital in Olsztyn between 1991 and 2007. An early and long-term complications connected with ALL chemotherapy were analysed. The most frequent symptom of organs toxicity was a damage of the liver function (64,6% treated children). The degree of liver toxicity in the course of chemotherapy had not the essential influence on final results of the event free survival (EFS). The serious complications occurred in 16% of patients (n=18) and they were the reasons of significant delay in realization of induction phase of chemotherapy ALL. Kaplan-Meier estimate of 5-year probability of event-free-survival for all 113 studied patients was p EFS=0,72±0,05. The pause in the treatment of initial phase - induction of remission ALL longer than 11 days (33% of the schedule) was significantly connected with a worse prognosis, p EFS=0.42±0,13 (p EFS of the rest of the patients=0.8±0,05). The toxic complications of treatment of children's ALL have the

influence not only on the clinical state and on their quality of life, but also on a direct risk of treatment failure including a relapse of disease.

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DOUBLE LAYERED SELF EXPANDABLE METAL STENT (SEMS) FOR MALIGNANT ESOPHAGEAL OBSTRUCTION ACROSS GASTROESOPHAGEAL JUNCTION (GEJ)

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Background: SEMS are effectve for relieving dysphagia and malnutrition in patients with malignant esophageal obstruction. However, data on the clinical outcomes of SEMS for malignant esophageal obstruction including gastroesophageal junction (GEJ) are still lacking.
Objective: The aim of this study is to evaluate the clinical outcomes of double-layered SEMS for treatment of malignant esophageal obstruction according to whether SEMS across GEJ.
Methods: A total of 45 patients who underwent the SEMS insertion for malignant esophageal obstruction were enrolled. Patients were classified as two groups, GEJ group (SEMS across GEJ, 18 patients) and non-GEJ group (SEMS above GEJ, 30 patients) according to SEMS position. Double-layered (outer uncovered and inner covered stent) esophageal stents were placed.
Results: The SEMS insertion and the clinical improvement were achieved in all patients in both groups Stent malfunction occurred in 7 and 9 in GEJ and non-GEJ groups, respectively; tumor overgrowth (5 vs 8 patiens), food impaction (1 vs 1 patient) and stent migration (1 vs 0 patient). There were no significant differences between two groups. Reflux esophagitis occurred more frequently in GEJ group (8 vs 5 patients, $p < 0.05$) and controlled by proton pump inhibitor. Aspiration pneumonia (0 vs 5 patients) and TEF (0 vs 2 patients) occurred.
Conclusion: Double-layred SEMS are feasible and effective treatment when placing SEMS across GEJ for malignant esophageal obstruction.

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HELPING WOMEN WITH OVARIAN CANCER MAKE DIFFICULT TREATMENT DECISIONS: THE DEVELOPMENT AND EVALUATION OF TWO DECISION AIDS

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Objectives: Women with ovarian cancer (OC) face difficult treatment decisions with uncertain quality of life and survival outcomes. Decision Aids (DAs) can improve informed decision-making, but no such tools are available to women with OC. Study 1 involves an RCT to evaluate the effectiveness of a previously piloted DA for asymptomatic women with rising tumour marker CA-125 following initial treatment; Study 2 involves a pilot study of a DA for women with resistant or refractory recurrent OC.
Methods: The DAs contain evidence-based information about the risks and benefits of each treatment option, and values clarification exercises. In Study 1, 178 women with rising CA-125 are randomised to receive either the DA or a general OC booklet, and complete standardised measures at baseline and 4-month follow-up. This DA helps women to make a decision about further treatment. In Study 2, 30 women with resistant or refractory recurrent OC provide feedback on the newly developed DA via a questionnaire and telephone interview. This DA helps women decide whether or not to continue active treatment.
Results: Overview and current progress on both studies will be presented.
Conclusion: This research program addresses a neglected area in the management of women with OC. It is anticipated that the two DAs will lead to improved understanding of treatment options, reduced decisional conflict and regret, and increased satisfaction with the decision making process. If effective, this relatively simple intervention has the potential to improve the clinical care, and ultimately quality of life, of women with OC.

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A COMBINATION OF LOW-DOSE MIRTAZAPINE AND LOW-DOSE GABAPENTIN AS USEFUL ADJUVANT TO OPIOIDS FOR PAINFUL BONE METASTASES

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Purpose: Systemic analgesics would not provide good enough pain relief for some kind of cancer pains. Metastatic bone pain is characteristic of cancer pain and one of the refractory cancer pains, since the pain includes not only nociceptive but also neuropathic pain. Low-dose gabapentin-antidepressants combination with opioids is effective in the management of neuropathic cancer pain. The aim of the present study was to see whether low-dose

mirtazapine-gabapentin is effective in the treatment of painful bone metastases.

Methods: Ten patients diagnosed as having bone metastases took gabapentin 200 mg and mirtazapine 7.5 mg every 12 hours orally. Previous 24-hour average intensity of total pain was assessed on 0–10 numerical scales. Pain assessments were performed at the first visit (T0) and 1 to 7 days and 10 and 14 days after the start of the medication.

Results: Low-dose gabapentin-mirtazapine soon decreased the total pain score, and the decrease was statistically significant at and after 3 days after the medication. Several patients developed mild drowsiness.

Conclusion: Low-dose gabapentin-mirtazapine combination with opioids was effective in the management of painful bone metastases without severe adverse effects.

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INCIDENCE OF FEBRILE NEUTROPENIA (FN) AMONG ASIAN EARLY STAGE BREAST CANCER (EBC) PATIENTS RECEIVING DOXORUBICIN-CYCLOPHOSPHAMIDE (AC) CHEMOTHERAPY

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Objectives: To investigate the incidence of FN with adjuvant AC chemotherapy among Asian EBC patients, to evaluate the impact of FN on chemotherapy delivery and to identify specific risk factors that would predispose Asian EBC patients to FN.

Methods: This was a single-centre, observational, retrospective cohort study conducted in Singapore. All EBC patients receiving three-weekly adjuvant AC chemotherapy between January 2007 and July 2010 were recruited into the study. Patients who received granulocyte colony-stimulating factors (G-CSFs) as primary prophylaxis and/or did not complete at least two cycles of chemotherapy were excluded from this study.

Results: A total of 721 cycles of chemotherapies were analyzed. A total of 184 patients were recruited, majority of whom were Chinese (83.2%). Median age was 54 years old (range, 25–74). Twenty-five patients (14%) developed at least one episode of FN, of which 16 developed FN at cycle 1. There was no significant difference in overall relative dose intensity between patients who developed FN and those who did not (94.7% versus 96.1%, p=0.42). Characteristics found to be associated with a higher risk of FN include progesterone positivity (OR 2.6, 95% CI 0.99 - 6.91, p=0.05) and low BMI (OR 1.1, 95% CI 1.03 - 1.30, p=0.02).

Conclusions: Asian EBC patients are at moderate risk for FN with AC chemotherapy, hence patient-specific risk factors must be determined to ensure appropriate primary prophylactic usage of G-CSF.

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ENDOBRONCHIAL CHEMOTHERAPY IN MALIGNANT AIRWAY LESIONS OF THE LUNG REPORT OF 3 YEARS EXPERIENCE

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Bronchoscopic palliative treatment is a modality that could reduce the symptoms in patients with inoperable lung cancer. Our interest is to study the palliative effect of intrabronchial chemotherapy using cisplatin, in patients with inoperable lung cancers. Between the years of 2003 and 2006, patients with unresectable lung cancer and endobronchial lesion were selected for tumor debulking via intrabronchial injection of cisplatin. After flexible bronchoscopy, maximum 20 mL cisplatin with the concentration of 50 mg/100 mL was injected into the bulk of the tumor through the special needle. The procedure was performed weekly for 4 sessions. After the end of fourth session, this procedure was done monthly. Patients were followed according to the symptoms, size of the involved lumen, and changes in the shape and size of intrabronchial lesion after local chemotherapy. A hundred patients were studied (72 men, 28 women). All of them diagnosed with inoperable lung cancer. According to the histology, they were categorized as adenocarcinoma (n=48), squamous cell carcinoma (n=32), and nonsmall cell lung cancer, unspecified (n=20). At the end of the forth session of local chemotherapy, the involved lumen was considerably opened (more than 25%) in 80 patients. We suggest that endobronchial chemotherapy with cisplatin could be used for debulking of the tumor in the caseswith inoperable lung cancer.

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INHIBITING PROSURVIVAL PATHWAYS BY EXTRACTS OF *OPHIOPOGON JAPONICUS* & *PHRAGMITITIS CAULIS* DECOCTION ON HUMAN A549 AND H157 LUNG CANCER CELLS

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Objective: Many traditional Chinese medicine (TCM) formula have been used in cancer therapy. We tested the efficacy of the *Ophiopogon japonicus* & *Phragmititis Caulis* Decoction on A549 and H157 human lung cancer cells in vitro and explore its probable molecular mechanisms.
Methods: Different solvents were applied to acquire the extracts from the decoction. Cellular proliferation was measured by MTT assay and colony formation assay. Cell cycle and apoptosis were analyzed by flow cytometry. Cell morphology was observed by Hoechst 33258 staining. Western blot was performed to detect related prosurvival pathways.
Results: Ethyl acetate extract could inhibit the growth of A549 and H157 cells but not in HFL-1 cells. It also can induce apoptosis in A549 and H157 cells. The treatment of cells with Ethyl acetate extract could induce
(i) inhibition of EGFR,
(ii) inhibition of MAPK proteins,
(iii) phosphorylation of Akt at Thr473,
(iv) regulation of NF-kB and IKKa, and
(v) degradation and phosphorylation of IkBa.
Conclusion: Ethyl acetate extract could inhibit proliferation and induce apoptosis on A549 and H157 cells via down regulation of MAPK, PI3K/Akt and NF-κB pathways. Our results provide a suggestion that Ethyl acetate extract of *Ophiopogon japonicus* & *Phragmititis Caulis* Decoction could be a promising chemopreventive agent against human non small cell lung cancer.
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MANAGEMENT OF DEPRESSION IN PANCREATIC CANCER

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Background: Pancreatic cancer has long been known to be associated with depression with many patients reporting depressive symptoms even before the carcinoma is diagnosed. Depression constitutes a detrimental factor in patients with late stages of cancer, lowering survival rates. The aim of this study is to present current data regarding management of depression in patients with pancreatic cancer.
Materials and methods: We performed a computerized literature search with the following term combination: 'depression' AND 'pancreatic cancer'. The search was performed using OvidWeb in the MEDLINE database. Only published papers in English between 1998 and February 2011 were included.
Results: Firstly, it is important to determine whether there is an underlying organic cause of the depression, such as metabolic disorders or drug side-effects, so that this disorder is treated first. If depression continues to manifest, pharmacologic treatment is necessary. The choice of antidepressants relies on the patient's medical history and overall status, main target symptoms, anticipated side-effects, interactions with other drugs, and the patient's preference. Treatment may include one or more of the following drugs: tricyclic, heterocyclic, atypical antidepressants, selective serotonin re-uptake inhibitors, benzodiazepins, as well as lithium carbonate, monoamine oxidase inhibitors or psychostimulants. The patient and his family should be taught coping strategies so that the feeling of helplessness is diminished and that the patient returns to his earlier psychological baseline.
Conclusions: Depression in pancreatic cancer is a condition that must be diagnosed as early as possible. Optimal treatment consists of appropriate pharmacologic treatment in combination with continuous psychosocial support.

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WORK-RELATED STRESS AND ITS IMPACT ON EVERYDAY LIFE: A SURVEY IN ONCOLOGY UNIT NURSES TREATING END-STAGE PATIENTS

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Background: Nursing has been identified as a stressful occupation but little attention has been paid to nurses treating end-stage patients with cancer. The aim of this study was to evaluate work-related stress in oncology nurses working in Greece.
Methods: A self-completion questionnaire was administered to nurses treating end-stage cancer patients for at least 1-year in Sotiria General Hospital. Exclusion criteria were working at a different department for a period of more than 2 weeks/year and caring for oncology and non-oncology patients simultaneously.

Results: Seventy-seven oncology nurses completed the questionnaire and were included. A relatively high percentage of the staff (41.5%) is overall satisfied with their job. When asked about stress while working, 33.8% of nurses agreed and 16.9% strongly agreed that their occupation causes them anxiety. 49.3% state that constantly dealing with critically ill patients is a very difficult task, while 64.9% believe that their personal life is negatively affected. More than half of the nurses claim that a patient's death affects their desire to work and emotional well-being. 89.6% state that the positive outcome of a patient's health offers them personal satisfaction and 70.2% answered their work that dealing with critically ill patients is rewarding.
Conclusions: Oncology nurses seem generally satisfied with their work but they report considerable stress that affects their everyday personal life. It is important to develop prevention and intervention strategies to reduce distress in nurses taking care of end-stage patients.

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TOXICITY OF TAXANES ON THE REPRODUCTIVE HEALTH OF PATIENTS WITH NSCLC

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Background: Fertility is a major concern in patients of reproductive age who are undergoing chemotherapy. Loss of germ cells in men causes a decrease in levels of inhibin B and increases levels of follicle-stimulating hormone (FSH). The aim of this study was to assess the impact of taxanes on the reproductive health of non-small cell lung cancer (NSCLC) male patients.
Methods: Forty male NSCLC patients scheduled to receive taxane-based chemotherapy were included. Serum levels of inhibin B, FSH and luteinizing hormone (LH) were measured before and after completion of chemotherapy. In 20 patients, bilateral testicular volume (BTV) was measured through testicular ultrasonography at these stages.
Results: The mean age of the patients was 53.1 years. Twenty-four patients received docetaxel-based doublets, whereas 16 patients were administered paclitaxel doublets. The median levels of inhibin B before and after chemotherapy were 97.7 and 40.1 pg/mL, respectively, and this reduction was statistically significant ($p<0.01$). Median serum FSH levels showed a statistically significant increase from 6.65 to 10.3 IU/L, $p\leq0.001$. The above differences were also found statistically significant when each of the docetaxel and paclitaxel were examined separately. The median inhibin B/FSH ratio showed a statistically significant decrease, whereas the increase in median LH levels was not significant. The BTV decrease was statistically significant, as was the decrease in each of the taxane groups separately.
Conclusion: Taxane-based chemotherapy causes a decrease in inhibin B, elevation of FSH levels and reduction of bilateral testicular volume, all of which indicate a significant effect on reproductive health.

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ROLE OF VITAMIN D INSUFFICIENCY IN PANCREATIC CANCER

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Background: Pancreatic cancer carries is usually diagnosed at advanced stages and carries a poor prognosis. Current treatment options are very limited creating the need for novel preventive and therapeutic modalities. The aim of this study was to summarize existing data on the role of vitamin D in pancreatic cancer.
Materials and methods: We performed a computerized literature search with the following term combination: 'pancreatic cancer' AND 'vitamin D'. The search was performed using OvidWeb in the MEDLINE database. Only published papers in English between 1980 and February 2011 were included.
Results: There are three main sources of vitamin D: sun exposure, diet and dietary supplements. Sun exposure has been associated with lower incidence of pancreatic cancer in ecological studies. Vitamin D seems to have a protective effect against pancreatic cancer by participating in proapoptotic, antiangiogenic, anti-inflammatory, prodifferentiating, and immunomodulating pathways. 25-hydroxyvitamin D [25(OH)D] serum concentrations are currently the best indicator of vitamin D status. Increased vitamin D levels seem to protect against pancreatic cancer but caution is needed as excessive dietary intake may lead to opposite results.
Conclusions: Future trials will clarify the role of vitamin D in the prevention and therapy of pancreatic cancer and will help establish guidelines regarding adequate sun exposure and vitamin D dietary intake.

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RESISTANCE EXERCISE MODULATES ADIPOCYTOKINE LEVELS IN TUMOUR BEARING RATS

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Introduction: Exercise is a simple, low-risk intervention and is associated with positive effects on lean mass and adipose tissue inflammation. Therefore, it could play a relevant role in counteracting the effects of cancer cachexia
Aim: We carried out a study to assess the effects of a resistance exercise program on adipocytokine profile on walker 256 tumour bearing rats.
Methods: Forty rats were randomly assigned to 1 of the 3 experimental groups: control (C), tumour-bearing (TB), Resistance Training (RT) and tumour-bearing RT (RTTB). During the 8 weeks of resistance training, climbing sessions were performed once every 3 days. Training sessions consisted of 3 ladder climbs, with 75%, 90%, and 100% of their maximal carrying capacity, determined in the previous session. At the sixth week of resistance training, tumour cells were inoculated in tumour groups subcutaneously in the right flank with a suspension of 2×10^7 Walker 256 tumour cells. The local concentration of TNF-a and IL-6 were assessed in mesenteric adipose tissue (MEAT) by Enzyme Linked Immuno Sorbent Assay (ELISA) and expressed in pg/ug.
Results: Protein expression of IL-6 in MEAT was higher in TB group 38% ($p<0,04$) when compared with CT and 50% ($p<0,03$) when compared with RTTB group. The same results with respect TNF-α was found. TB protein expression was higher39% ($p<0,04$) compared with CT and 46% ($p<0,035$) higher compared with RTTB group.
Conclusions: The resistance exercise protocol showed an anti-inflammatory effect on adipocytokine profile on walker 256 tumour bearing rats

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UNANTICIPATED CEREBROVASCULAR COMPLICATIONS OF SORAFENIB

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Introduction: Sorafenib is an orally active angiogenetic multikinase inhibitor that has been approved in the treatment of renal and hepatocellular carcinoma. The most common adverse reactions observed in patients receiving sorafenib include asthenia, fatigue, hand-foot syndrome, rash, gastrointestinal and liver dysfunction. Bleeding and venous thrombotic events have generally been described with angiogenetic agents but cerebrovascular accidents are rarely reported.
Case presentation: We report two cases of patients with hepatocellular carcinoma who developed a cerebrovascular accident while receiving sorafenib. Neither patient had any risk factors for the cerebrovascular events apart from gender and age in the second patient. Laboratory data were non contributory. The head CT scan did not reveal acute abnormalities in either patient. No significant stenosis was visible in the carotid ultrasound and the echocardiogram showed normal size of the heart chambers and normal systolic function of the left ventricle. Sorafenib was discontinued in both cases.
Conclusions: These two cases suggest the need for careful evaluation of a patient's individual risk for CVA before sorafenib is started and for close monitoring afterwards. Physicians must be alert in order to detect early neurological symptoms and should consider discontinuing sorafenib promptly when other risk factors are absent.

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MANAGEMENT OF BEVACIZUMAB-RELATED HYPERTENSION

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Background: Bevacizumab is a recombinant humanized monoclonal antibody that targets the vascular endothelial growth factor (VEGF). It is approved in the treatment of metastatic colorectal cancer, non-squamous advanced or metastatic non-small cell lung cancer, metastatic renal cell carcinoma and glioblastoma. Hypertension is a common side effect of bevacizumab and appears to be dose-dependent. The aim of this study was to summarize all existing data regarding optimal management of hypertension induced by this agent.
Materials and methods: We performed a computerized literature search with the following term combination:

'hypertension' AND 'bevacizumab' AND 'treatment'. The search was performed using OvidWeb in the MEDLINE database. Only published papers in English between 1995 and February 2011 were included.

Results: The correct evaluation of the levels of hypertension is of critical importance and constitutes the first step for treatment. Clinic blood pressure can be misleading rendering home blood pressure monitoring the most effective technique. A baseline assessment and follow-up monitoring of blood pressure is considered necessary for all patients receiving bevacizumab. According to the British Columbia Cancer Agency recommendations, a thiazide diuretic should be the first line of treatment, with angiotensin-converting enzyme inhibitors being added as second line. However, there are no evidence-based data regarding which antihypertensives are more appropriate for bevacizumab-related hypertension. It seems that the benefits from antihypertensive treatment are largely independent of the drugs used as long as they adequately lower blood pressure.

Conclusion: Randomized prospective studies are necessary to help establish guidelines for the clinical management of bevacizumab-induced hypertension.

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USING MICRO DOSES OF KETAMINE AS AN ADJUVANT ANALGESIC FOR CONTROLLING NEUROPATHIC PAIN IN CANCER PATIENTS

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Ketamine as an adjuvant analgesic is used in quite different ways-either in sub-anesthetic doses, or as CSCI, or as an oral solution. Its usual starting dose is 0,5-1 mg/kg/24 h and is gradually increasing till effect or untill side effects occur.

Materials and methods: Cancer patients experiencing neuropathic pain were treated with micro-doses Ketamine (2 mg–10 mg/24 h)as adjuvant analgesic either as CSCI or as a single-bolus injection (2–5 mg). The level of pain intensity, presence and severity of side effects and patients satisfaction were followed.

Results: As an adjuvant analgesic used in some selected patients Ketamine in micro-doses (2 mg–10 mg/24 h) was very effective. There was significant reduction of pain intensity levels. There were no placebo effects because the attempts to stop Ketamine infusion was followed by escalation of pain and diminished quality of life. There were no side effects while using micro-doses Ketamine.

Discussions: Ketamine is NMDA-receptor blocker used to treat neuropathic pain. We observed that in some patients micro-doses Ketamine were effective in some patients. May be these patients have more sensitive receptors because of genetic differences or may be there are different NMDA-receptors subtypes.

Conclusions: The observation suggests that in some patients—responders, Ketamine (2 mg–10 mg/24 h) was effective adjuvant for controlling neuropathic cancer pain. In these patients using micro-doses Ketamine significantly improve patients' quality of life without risks of development of undesired side effects. These observations require further investigations.

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BARRIERS AND FACILITATORS AFFECTING DILATOR USE AFTER PELVIC RADIOTHERAPY FOR GYNAECOLOGICAL CANCER: THE PATIENT PERSPECTIVE

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Objectives: Pelvic radiotherapy for gynaecological cancer often leads to damage of the vaginal mucosa, resulting in stenosis (obstruction by scar tissue). Stenosis has been associated with sexual dysfunction and can hinder medical examinations to detect recurrence. The use of vaginal dilators is commonly recommended to prevent or minimise stenosis, but women are reluctant to use these devices. The aim of this study was to explore the patient experience of dilator use and identify key barriers and facilitators affecting compliance with clinician recommendations.

Methods: Women were eligible for the study if they had undergone pelvic radiotherapy for gynaecological cancer up to 2 years ago, and received a vaginal dilator as part of their post-treatment rehabilitation. Fifteen participants completed a semi-structured interview.

Results: Barriers to dilator use included: uncertainty about how/when to use dilators, viewing it as a negative experience, lack of time or forgetting, and the need for discretion due to an association with sex aids. Facilitators included: concern about stenosis, belief that dilators work, reminders of stenosis, acceptance of dilator use as part of their normal routine or an extension of medical treatment, and focusing on positive aspects. These factors were incorporated into a model of dilator use based on the Health Belief Model.

Conclusions: This is the first qualitative study to specifically investigate the patient experience of dilator use. The barriers and facilitators identified in this study and the proposed

theory-based model provide new insights to inform future research and clinical management of dilator use.

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IMPROVING COMMUNICATION ABOUT POST-RADIOTHERAPY ADJUSTMENT: A PILOT OF AN INFORMATION BOOKLET FOR WOMEN WITH GYNAECOLOGICAL OR COLORECTAL CANCER

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Objectives: Women who undergo pelvic radiotherapy for gynaecological or colorectal cancer often experience physical and psychosexual side effects that can be prevented or reduced with the right care. However, research and clinical data suggest that information provision about recovery and rehabilitation options, such as use of dilators, is currently suboptimal. This study aimed to develop and pilot a booklet to improve women's knowledge of: radiation-induced side effects that may affect sexual functioning, and self-care strategies to minimise post-treatment vaginal changes, including the use of dilators.
Methods: The booklet development was guided by a comprehensive literature review, clinician input and the C.R.E.D.I.B.L.E principles. Twenty women who were treated with pelvic radiation therapy for gynaecological or colorectal cancer within the last 5 years, and were provided with vaginal dilators, provided feedback on the content and format of the booklet via a semi-structured phone interview and a set of standardised and purpose-designed questionnaires.
Results: Women had good understanding of the booklet content (90% provided correct answers). The booklet was perceived as very helpful, easy to read and understand, was not distressing, and provided additional information to discussions with health professionals.
Conclusions: The booklet will be revised based on pilot feedback, and its impact on psychosexual and clinical outcomes will be evaluated in a multi-centre RCT.

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HELPING WOMEN "OVERCOME" SEXUAL PROBLEMS AFTER BREAST CANCER TREATMENT: AN INTERVENTION STUDY

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Objectives: Up to 50% of breast cancer (BC) survivors report sexual problems, yet very few intervention studies have addressed these issues. The OVERcome (**O**live oil, **V**aginal **E**xercise, **R**eplens®) study prospectively piloted a novel intervention involving:
i) pelvic floor muscles (PFM) exercises to prevent/manage PFM dysfunction,
ii) a vaginal moisturizer (Replens®) to alleviate vaginal dryness, and
iii) olive oil as a lubricant during intercourse, to address sexual difficulties following adjuvant BC treatment.
Method: 37 women (84% response rate) were instructed to apply Replens® 3 times/week, perform PFM exercises twice/day, use olive oil during intercourse as required, and complete a weekly compliance diary. PFM training was administered by a qualified pelvic floor physiotherapist at Weeks 0 (T0) & 4 (T1), with follow-up at Weeks 12 (T2) & 26 (T3). At each time point, women completed validated measures of sexual functioning (SAQ, VAS-DYSPAR), quality of life (FACT-B), and distress (HADS), and the physiotherapist recorded objective measures of PFM functioning.
Results: Women reported significant improvement in overall sexual functioning, sexual satisfaction and degree of dyspareunia (all $p<.001$), with maximal benefits of the intervention at T2 and a plateau effect observed thereafter. Trends in improvement in quality of life were found at T2 ($p=.060$) and T3 ($p=.090$). Most women rated PFM exercises (94%), Replens® (88%) and olive oil (78%) as helpful. Unexpected cases of vaginal stenosis were noted during initial screening, requiring further research.
Conclusion: OVERcome appears to be an effective and safe intervention for women with physical sexual problems following BC treatment.

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BILIARY DRAINAGE FOR OBSTRUCTIVE JAUNDICE CAUSED BY UNRESECTABLE HEPATOCELLULAR CARCINOMA

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Background and aims: For palliation of the obstructive jaundice associated with unresectable hepatocellular carcinoma (HCC), percutaneous transhepatic biliary drainage (PTBD) is preferred to endoscopic retrograde biliary drainage (ERBD). However, little is known about which is the better option in patients with obstructive jaundice caused by unresectable HCC.
Patients and methods: A total of 60 patients who received ERBD or PTBD for the palliation of obstructive jaundice due to unresectable HCC between January 2000 and May 2009 were included in this retrospective study. Successful drainage, drainage patency and overall survivals of patients were evaluated.
Results: The overall frequency of successful drainage was higher in the ERBD group (22/29, 75.9%) than in the PTBD group (15/31, 48.4%) by univariate analysis (p=.029); the multivariate analysis showed marginal significance (p=.057). The duration of drainage patency was longer in the ERBD group than in the PTBD group (82 days vs. 37 days, respectively, p=.020). In addition, the duration of drainage patency was longer in patients that underwent TACE after a successful drainage than in patients that did not undergo TACE, regardless of the drainage modality (109 days vs. 38 days, respectively, p=.003). The median survival of patients that achieved successful drainage, regardless of which procedure was performed, was much longer than in patients without successful drainage(143 days vs. 38 days, respectively, p<.001).
Conclusions: ERBD can be used as the initial treatment option to improve obstructive jaundice in patients with unresectable HCC, given higher initial success rate and longer duration of drainage patency.

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SEXUAL ADJUSTMENT AND SELF-PERCEPTION IN MEN FOLLOWING PROSTATE CANCER

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Objectives: Many men with prostate cancer (PC) are living with the consequences of the disease and its treatment, which can affect urinary, sexual, and bowel function. However, little is known about how these side-effects impact on men's intimate relationships and self-perception. The aim of this study was to explore experiences of men with PC, focusing on the impact of the disease and its management on sexuality, body image, self-esteem, personal relationships, overall quality of life and unmet needs.
Methods: 21 men, recruited via a Prostate Cancer Support group newsletter, participated in face-to-face semi-structured interviews, which were transcribed and subjected to content analysis.
Results: The qualitative analysis revealed three themes which contributed to men's post-treatment psychosexual adjustment:
i) Changes in Self-Identity,
ii) Communication and Support, and
iii) Adjustment Process.
The "Changes in Self-Identity" theme included five sub-themes: *Physical, Self-Perception, Emotional, Existential* and *Relationship* changes. The "Communication and Support" theme included six sub-themes: communication and support between men and their *Partner, Doctor, Other Health Professionals, Other Men with Prostate Cancer & Support Groups,* as well as *Information Provision* and *Recommendations for the Future*. The "Adjustment Process" theme included three sub-themes: *Lifestyle Change, Coping Strategies,* and *Striving for Acceptance & Integration.*
Conclusions: The study findings highlight the importance of adequate patient-health professional communication, particularly during the treatment decision-making process, in facilitating post-treatment adjustment. Patients would benefit from access to multidisciplinary sources of care, including prostate nurse-led psycho-educational sessions, psychological care and access to support groups.

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EXPERIENCES OF WOMEN WITH VULVAR INTRAEPITHELIAL NEOPLASIA (VIN): A QUALITATIVE INSIGHT

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Objectives: Although vulvar intraepithelial neoplasia (VIN) is a relatively rare condition, the incidence of VIN is on the rise, particularly in younger women. Consequently, women with VIN are surviving longer and undergoing repeated, disfiguring treatments to prevent the development of vulvar cancer. However, few studies have investigated the psychosocial impact of VIN. The aim of this qualitative study was to explore women's experiences with VIN, including the impact of diagnosis and treatment on personal relationships, sexuality, body image and, overall quality of life, and to identify areas of unmet needs.

Methods: Semi-structured telephone interviews were conducted with 25 women treated for VIN within the past 5 years. Purposive sampling was used to recruit women of different ages, with varying stages of disease and recovery.
Results: The main themes that emerged from qualitative analysis based on Grounded Theory centered around issues of initial misdiagnosis and misunderstanding the nature of VIN, its causal factors, the extent of disease severity, or the importance of continued surveillance. Participants also reported a mixed impact of VIN on sexuality, relationships and support. All participants reported the need for improved information delivery about diagnosis, treatment and post-operative care.
Conclusions: Whilst standard practice involves verbal and written information about VIN and post-operative care, very few of the women with VIN interviewed understood their diagnosis, or how to best care for themselves post-operatively. Recommendations for individualizing information to target the nature and etiology of VIN, post-operative care, and the importance of continued surveillance will be discussed.

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CANCER SURVIVORSHIP: A PILOT STUDY EXPLORING RESPONSES OF BONE MARROW TRANSPLANT SURVIVORS TO A LIFE-COACHING INTERVENTION

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Introduction: Cancer and Bone Marrow Transplant (BMT) survivors struggle to resume life after treatment reporting difficulties with social re-integration, returning to former roles, social relations and employment. With 2 million UK cancer survivors predicted to rise, addressing psychosocial rehabilitation is imperative.
Objectives: The aim of this pilot study was to explore the feasibility, acceptability and impact of a life-coaching intervention for BMT survivors.
Methods: A concurrent embedded experimental mixed method design was employed. It comprised simultaneous data collection activities pre- and post-intervention; qualitative semi-structured telephone interview and quantitative postal questionnaire including psychometrically validated scales measuring psychosocial and functional well-being. Quantitative data were analysed descriptively and qualitative data were analysed using Framework Analysis. A purposive sample of 7 recently transplanted (<18 months) BMT recipients participated and evaluated one-to-one life-coaching delivered fortnightly over 8 weeks by a professional life-coach.
Results: Data trends were favourable. Study participants expressed lower social difficulties and increased functional well-being. They were less anxious and depressed and reported fewer survivor concerns after life-coaching. Perceived self-efficacy remained static although participants felt empowered, more confident and able to plan for the future. They gained skills and reported achievements including CV development, returning to work, socialising and creative interests.
Conclusions: Life-coaching appeared to effect change with various achievements reported in participant's lives.Feasible to deliver and highly acceptable, evident through comments and recommendations, life-coaching exceeded expectations and appeared a positive, potentially life-changing experience. This study suggests that life-coaching has genuine potential and is highly relevant to the cancer survivorship agenda.

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TALKING ABOUT DYING AND DEATH: EXPLORING THE VIEWS OF AN EX-COAL MINING COMMUNITY IN THE UK

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Objectives: There is a general perception held by hospice and palliative care practitioners that society is reluctant to talk about dying and death, which can be detrimental to dealing with bereavement. This study aimed to: identify perceptions, barriers and facilitators of the general public and health care professionals (HCPs) surrounding talking about dying and death, and propose methods of increasing participation of talking about dying and death.
Methods: Two semi-structured focus groups enabled exploration of a wide range of views from a variable population from the general community (n=10) and HCPs (n=9). The focus group sessions lasted between 60–75 minutes and were led by a facilitator and assistant, audio-recorded and transcribed. Systematic and analytical coding of transcripts was undertaken.
Results: A set of four conceptual themes with sub-themes were identified (Table 1)
[Table 1: Thematic Coding Framework]

Themes	Sub-themes
Emotions, beliefs and behaviours	fear and worry, acceptance, influence of culture, faith and family, influence of personal experiences, influence of professional role
Coping with adversity	practicalities, language, personal and family communication, professional aspects
Difficulties, barriers and tensions	an upsetting topic, family tensions, medical language, organisation and coordination of palliative care services
Fostering a participative future	outreach to community, services open to public, education and training

Conclusions: Dying and death was articulated as an upsetting topic, and remains a taboo in this culture accompanied by a belief that talking will bring harm. Some HCPs take the view that they 'do not want to upset patients' and choose avoidance, while others are intrinsically drawn to talking as an integral aspect of their role. Shared thinking and actions from HCPs, managers and the public is advocated.

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WHAT ARE THE EXPERIENCES AND PREFERENCES OF PATIENTS, FAMILIES, AND PHYSICIANS IN TRIADIC CANCER CONSULTATIONS? A SYSTEMATIC REVIEW

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Objectives: Family support is important during the cancer experience and can significantly impact on the dynamics and outcomes of cancer consultations. The current systematic review aimed to elucidate and evaluate the nature of doctor-patient-family (triadic) consultations, the roles family members assume, and the preferences and experiences of patients, families, and physicians.
Methods: Relevant studies were identified via Medline, CINAHL, and PsycINFO databases (1950–2011), reference lists of articles and reviews, grey literature databases, and consultations with experts in the field. Studies that explored aspects of doctor-cancer patient-family communication and/or decision-making were included. Populations unable to fully participate in the consultation (e.g. paediatrics) were excluded. Two authors independently assessed study quality and extracted data.
Results: Of 6,725 titles initially identified, 26 cancer-specific studies were included in the final review. Analysis of the studies revealed five primary themes:
1) triadic consultation characteristics;
2) family member roles;
3) preferences and perspectives on consultation involvement;
4) triadic decision-making; and
5) the impact of family involvement. Strategies to optimize triadic consultations to support the patient were highlighted.
Conclusions: This review revealed that:
i) family members generally provide practical and emotional support and facilitate communication in cancer consultations;
ii) most patients prefer family involvement within the consultation and family members desire such involvement; and
iii) doctors, patients and family members are often unclear about the role of family in the decision-making process.
Strategies to enhance patient support through family involvement are greatly desired by doctors, patients, and family members.

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QUALITY OF LIFE OF PATIENTS WITH ADVANCED HEPATOCELLULAR CARCINOMA UNDERGOING PALLIATIVE TREATMENTS IN HONG KONG

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Background and aim: Hepatocellular Carcinoma (HCC) is a rare disease. However, it is one of the major causes of cancer deaths in Hong Kong Chinese. The majority (70-85%) of HCC patients cannot undergo liver resection or transplantation and therefore palliative treatment modalities are commonly used. This study aimed to assess the quality of life (QOL) issues including functioning and symptoms subscales among advanced HCC patients and identify factors (e.g. age, treatments, clinical data, and laboratory results) in determining patients' QOL.
Methods: A cross-sectional quantitative design was adopted. Data were collected from 85 HCC patients in Hong Kong using The European Organization for Research and Treatment of Cancer (EORTC) QLQ C30 Chinese Version.
Results: Forty-five percent of subjects aged over 60. The overall mean score of the global health status/QOL of patients were low (46.7/100), with poorest subscale score on role function and higher level of insomnia and fatigue. Patients below age 60 experienced more emotional and financial problems ($p<.05$). Patients underwent Supportive Treatments had the lowest quality of life level (17/100) when comparing with patients undergone Transarterial Chemoembolization (TACE), Percutaneous Ethanol Injection (PEI) and Radiofrequency Ablation (RFA). Elevation of Alpha Feto Protein (AFP) and bilirubin, and lower albumin level significantly affected QOL ($p<.05$).
Conclusion: The low QOL level of HCC patients deserve attention from health care professionals to strive for a better effectiveness of care. Differences of QOL in subgroups

(e.g. treatment, age, liver function) increase the knowledge base of stratified care in HCC patients.

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DEVELOPMENT OF A FRAMEWORK AND EDUCATIONAL RESOURCES TO PROVIDE EFFECTIVE PSYCHOSEXUAL CARE OF WOMEN WITH GYNAECOLOGICAL CANCER

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Objectives: Women experiencing psychosexual concerns following gynaecological cancer (GC) come into contact with a range of health professionals in a variety of settings. These health professionals require knowledge and skills to minimize the risk of these concerns and to effectively treat them should they occur. The aim of this project was to develop a psychosexual care framework and resources to improve health professionals' skills and confidence in providing effective psychosexual care.
Method: The Framework for Psychosexual Care of Women was developed following a comprehensive systematic review of available evidence. All studies which explored, described and/or explained the psychosexual issues experienced by women affected by GC and their partners were included. Relevant studies were identified via CINAHL, PubMed, PsycINFO, and Medline (1999 to mid October 2010).
Results: 116 papers were identified, addressing: psychosexual sequelae, supportive care and quality of life, and health professional practices (including intervention studies). These topics were analysed to identify competencies relevant to health professionals in various practice settings and to guide the development of the Framework and educational resources. The resulting Framework comprised three levels: Universal, Extended and Specialist Care.
Conclusion: Due to the highly specialized and often sensitive nature of psychosexual care, health professionals require specific skills for identification of cases and appropriate referral techniques, as well as strategies to resolve psychosexual problems. The newly developed Framework and educational resources, which can be tailored to the needs of professionals from various disciplines working in a variety of healthcare settings, are available on the Cancer Learning website.

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INVOLVING FAMILY MEMBERS IN CANCER CONSULTATIONS: EXPLORING PATIENT, FAMILY, AND PHYSICIAN PERSPECTIVES TO ENHANCE TRIADIC COMMUNICATION

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Objectives: Family members are an important source of support throughout the cancer experience, and can have a considerable impact on the dynamics and outcomes of cancer consultations. Despite high rates of family attendance within cancer consultations, very little is known about the doctor-patient-family (triadic) relationship, particularly strategies to optimize consultation communication and participation to the extent desired by the patient. The current study aimed to explore the communication and decision-making preferences and experiences of patients, family members, and oncologists. It also aimed to elucidate strategies to optimize triadic communication, thus enhancing the patient experience.
Methods: In-depth focus groups were conducted with homogeneous groups of cancer patients/survivors (n=30), family members (e.g. spouse, adult child; n=30), and oncology nurses (n=10). Semi-structured interviews were conducted with oncology physicians (n=10). All participants had experience in triadic cancer consultations. During the focus groups/interviews, participants described their preferences for and experiences of triadic communication/decision-making, and any strategies/recommendations for improved triadic communication/decision-making. All focus groups/interviews were audio-recorded, transcribed verbatim and managed using NViVo8 software. Main qualitative themes were identified using thematic analysis.
Results: An in-depth qualitative description of the triadic communication and decision-making of patients, family members, oncology nurses, and physicians will be presented. Implications for improving clinical practice will be discussed.
Conclusions: This study will provide preliminary qualitative data to further explain patient and family preferences and experiences for triadic cancer consultations. The

findings will inform both clinical practice and future interventions to improve the experiences and support of patients and families within cancer consultations.

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SILENCING OF SPINAL PSD-95GENE RELIEVE NEUROPATHIC PAIN IN SCIATIC NERVE INJURY

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Objective: To investigate the effect of spinal PSD-95 deficiency on neuropathic pain after sciatic nerve injury by using behavioral testing and immunoblot analysis, combined with RNA interfering technology
Methods: 48 Sprague-Dawley rats were divided into 4 groups randomly, After being implanted with intrathecal catheter, rats were injected intrathecally with PSD-95 gene specific siRNA, mismatch RNA. Saline and i-fect respectively. Mechanical and heat stimuli were applied before and at the giving points after the surgery, mechanical withdraw threshold (MWT) and paw withdraw threshold latency (PWLT) were recorded. Western blot analysis were performed for PSD-95 in the spinal dorsal horn tissue after euthanasia of the rats.
72 Sprague-Dawley rats were divided into 4 groups randomly. Chronic constrictive injury (CCI) of the sciatic were carried out in the rats after being implanted with intrathecal catheter. Rats were then injected intrathecally with PSD-95 gene specific siRNA, mismatch RNA, and saline respectively. Mechanical and heat stimuli were applied before and at the giving points after the surgery, mechanical withdraw threshold (MWT) and paw withdraw threshold latency (PWTL) were recorded. Western blot analysis were performed for PSD-95 in the spinal dorsal horn tissue after euthanasia of the rats.
Results: Intrathecal injection of PSD-95 gene specific siRNA can relieve the mechanical hyperalgesia of the rats after sciatic nerve injury, suppress the expression of PSD-95 in the dorsal horn of spinal cord.
Conclusion: PSD-95 gene specific siRNA can induce PSD-95 gene silencing in spinal cord and relieve mechanical hyperalgesia in the CCI model of neuropahtic pain

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COGNITIVE FUNCTION OF ELDERLY PATIENTS TREATED FOR A LOCALIZED BREAST CANCER: PRELIMINARY RESULTS OF A MULTICENTER, PROSPECTIVE LONGITUDINAL STUDY

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Mild cognitive deficits - in particular on episodic memory and executive functions - are often reported by patients receiving chemotherapy for cancer, but could also be observed before treatment, just after the announcement diagnosis. Our goal was to clarify the incidence and nature of these disorders among elderly patients, a specifically vulnerable group to develop cognitive dysfunctions, in evaluating the impact of chemotherapy and the influence of anxio-depressive factors before and after treatment.
Sixty-three women (71±4 years) with localized breast cancer were included and 54 of these women had cognitive evaluation after adjuvant treatment (2 sub-groups: 17 treated with chemotherapy and radiotherapy and 37 with radiotherapy only). Executive functions, working and episodic memory, cognitive complaint and anxiety-depression were assessed before and after the treatment.
Before any adjuvant treatment, compared with normative data, 22% of women had a significantly cognitive pathological score ($z \leq -1.65$ SD) to at least one of the executive tests, 25% on working memory and 25% on episodic memory. These cognitive performances were significantly correlated with cognitive complaint ($p < .05$). Anxiety-depression is correlated with cognitive complaint but not with cognitive scores. After treatment, episodic memory performances of the 2 groups differed significantly ($p < .05$) to the detriment of the group treated with chemotherapy.
These preliminary results show a significant proportion of elderly patients with breast cancer cognitively impaired before any adjuvant therapy and a relationship between some neuropsychological scores and cognitive complaint. Chemotherapy appears to have a deleterious impact on recovery processes in episodic memory.

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FARNESYLTRANSFERASE INHIBITOR IN CANCER TREATMENT

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In cancer treatment, remarkable progress has been made in the identification of new targets. Ras proteins are among the most intensively studied proteins of the past decade. Ras mutation is one of the most frequent aberrations in cancer and plays a fundamental role in tumorigenesis. In approximately 30% of human cancers, mutated *ras* genes produce mutated proteins that remain locked in an active state, thereby relaying uncontrolled proliferative signals.

For functioning, Ras requires attachment to the inner surface of the plasma membrane. Due to the functional role of Ras farnesylation, inhibiting the enzyme protein farnesyltransferase would prevent Ras from maturing into its biologically active form. When farnesylation is blocked, the function of Ras protein is severely impaired because of the inability of the nonfarnesylated protein to anchor to the membrane.

Farnesyltransferase inhibitor (FTI) has been developed as anticancer drug and is currently evaluated in clinical trials. Preclinical data revealed that although FTIs inhibit the growth of ras-transformed cells, they are also potent inhibitors of a wide range of cancer cell lines that contain wild-type *ras* and also block the farnesylation of several additional proteins. Phase I and II clinical trials confirmed a relevant antitumor activity and a low toxicity. FTIs are a promising class of novel antineoplastic agents. The three compounds, BMS-214662, R-115777 and Sch-66336 are the most advanced. FTI in combination with some cytotoxic antineoplastic drugs, ionizing radiation and other targeted therapeutic agents exhibit additive effects and are warranted to develop better therapeutic strategies in cancer.

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PROSPECTIVE ASSESSMENT OF QUALITY OF LIFE IN ADULT PATIENTS TREATED FOR LOW GRADE GLIOMA

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Purpose: The assessment of Health Related Quality of Life (HRQOL) in cancer patients has become increasingly important during the past decades. The aim of this study was to evaluate and assess the HRQOL in adult patients treated for low-grade glioma.

Methods and materials: Forty-three adult patients with low-grade glioma were evaluated prospectively between September 2006 and December 2010. We assessed HRQOL at baseline (after surgery before radiotherapy), at the end of radiotherapy and during follow-up (every 3 months for the first two years and every 6 months between 2–5 years), using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire 30 (EORTC-C30), Brain Cancer Module-20 (BN-20), Mini Mental Standard Examination (MMSE) and Hospital Anxiety and Depression Scale (HADS).

Results: There were many changes regarding to both quality of life and cognitive functions during first three years of follow-up. These were global score of EORTC-C30 questionnaire, future uncertainity, communication deficit, headache, drowsiness and hair loss parameters of BN-20 and recall score of SMMT. There were a statistically siginifact difference regarding to cognitive function scores of the patients who used or did not use antiepileptic drugs ($p<0.001$). We did not observe any depression and anxiety in our patients.

Conclusion: Our results suggested that there were changes in different domains of health related quality of life in low grade glioma patients and antiepileptic drugs had negative effect on cognitive functions.

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INTERVAL BETWEEN DIAGNOSIS OF ADVANCED CANCER AND CESSATION OF ACTIVE ANTI-CANCER TREATMENT CAN PREDICT SURVIVAL IN TERMINALLY ILL CANCER PATIENTS

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Objectives: Although various prognostic factors have been proposed to predict survival in terminally ill cancer patients, accurate prognostication is still a challenging task. The objective of this study was to evaluate whether the time interval between diagnosis of advanced cancer and cessation of active anti-cancer treatment (ATP; active treatment period) can predict survival in terminally ill cancer patients.

Methods: We prospectively evaluated 79 patients with advanced (recurrent or metastatic) cancer who were determined as terminal stage, namely cessation of active anti-cancer treatment and transition to palliative care, by attending oncologists. ATP and other known prognostic factors including clinical symptoms and signs, performance status, laboratory tests, and clinical prediction of survival (CPS) were analyzed.

Results: Of the 79 patients, 46 were male (58%) and 33 were female (42%) with a median age of 60 years (range, 21–82). Median overall survival after being diagnosed with advanced cancer was 11.6 months (95% confidence interval (CI), 8.02–15.18), and survival after being determined as

terminal stage was 1.9 months (95% CI, 1.38–2.42). According to 3 ATP categories (<3 months, 3–12 months, and >12 months), terminal stage survival were 1.0 month, 1.8 months, and 3.6 months, respectively (p=0.002). On multivariate analysis, short ATP, non-colorectal cancer, fatigue, and Karnofsky performance status less than 50 were significantly associated with a poor prognosis.

Conclusions: Our study suggests that ATP is an independent prognostic factor for survival in terminally ill cancer patients who cannot receive active anti-cancer treatment anymore. Future prognostic models should include ATP as a prognostic variable.

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SCREENING FOR DEPRESSION IN FILIPINO CANCER PATIENTS: USE OF PHQ-8

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Objectives: The World Health Organization recognizes depression as one of the most burdensome diseases in the world. Studies show that depression has a strong and complex relationship with cancer. However, little is known on the prevalence of depression among Filipino cancer patients. Our objectives were to assess depression using the Patient Health Questionnaire (PHQ)-8-Tagalog version and to determine the factors associated with depression.

Methods: The PHQ-8 was translated to Tagalog, the primary language in the Philippines, and was administered to all inpatients and outpatients, age 18 years or older, in a tertiary cancer treatment center.

Results: A total of 257 patients participated in the survey (94% response rate). A majority of the sample were women (62%), 75% had early stage of disease, and mean age was 52 years (SD=13). The most common cancer was breast (20%) followed by lung (9%). Internal consistency reliability (Cronbach's alpha coefficient) of the PHQ-8 was 0.84. The PHQ-8 mean score was 5.6 (SD=5.5). Using a PHQ-8 cut-off of ≥10, we found that as many as 22% were depressed. Performance status (OR=1.7; 95%CI=1.2–2.5), self-reported anxiety (OR=1.3; 95%CI=1.2–1.5), and lack of appetite (OR=1.2; 95%CI=1.1–1.3) were significantly associated with depression. However, depression did not vary by age, sex, or stage of disease.

Conclusions: This study is among the first to assess the prevalence and factors associated with depression in a tertiary cancer treatment center in Manila, Philippines. The findings provide empirical support for the need for better programmatic efforts to improve mental health services among cancer patients.

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THE EFFECT OF ERBB INHIBITION ON CHEMOTHERAPY-INDUCED INTESTINAL DAMAGE

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Objectives: Lapatinib, a dual TKI of EGFR and ErbB2, has shown great potential in treatment of advanced metastatic breast cancer and promising results when in combination with paclitaxel for early and inflammatory breast cancers. Lapatinib causes diarrhoea in large numbers of patients receiving treatment and when in combination with paclitaxel, the number of patients afflicted and severity of the diarrhoea increases significantly. This study aimed to determine mechanisms of action of lapatinib and paclitaxel alone and in combination on the alimentary tract.

Methods: Male Albino Wistar rats were grouped and treated with weekly 9 mg/kg intraperitoneal paclitaxel and daily with 240 mg/kg oral lapatinib. Rats were monitored for development of diarrhoea and development of intestinal injury for 5 weeks. At weekly kills, sections of colon, jejunum and their mucosa were collected for investigation.

Results: Immunohistochemistry found that expression of total and phosphorylated EGFR and ErbB2 decreased significantly by week 4 for lapatinib and paclitaxel/lapatinib groups in jejunal crypts. Real-time PCR of mucosal ErbB2 showed significant increases in expression in lapatinib and paclitaxel/lapatinib groups by week 2, returning to basal levels by week 4 in jejunum. These results indicate that lapatinib affects the EGFR/ErbB2 pathway, by inhibiting it at the protein level but not at the level of transcription and is not correlated with diarrhoea.

Conclusions: This data suggests that lapatinib and lapatinib/paclitaxel combination cause diarrhoea through mechanisms not directly related to ErbB2/EGFR inhibition in the intestine. This implies that alternative pathways and mechanisms may be involved in lapatinib-induced diarrhoea.

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MEANING OF HOPE: A QUALITATIVE STUDY AMONG BREAST CANCER PATIENTS

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Objectives: Hope plays an important role in the experience of cancer patients and their family. This study aimed to examine this in breast cancer patients in Iran.
Methods: A qualitative study was carried out to find out what hope means to breast cancer patients. A sample of women with breast cancer attending to Iranian Centre for Breast Cancer were entered into the study. In-depth interviews were carried out to collect data. Interviews were recorded, transcribed, and thematic analysis was performed.
Results: In all 34 breast cancer patients were interviewed. The mean age of patients was 49.2 (SD=19.8). Time since diagnosis ranged from 6 months to 12 years. Most patients diagnosed with stage II (n=18, 54%), 8 patients with stage I (23%), and the remaining 8 patients with stage III (23%). Nineteen patients received radical mastectomy (56%), and 15 patients (44%) received conservative surgery. Hope was defined in different ways but most patients indicated the following themes for the meaning of hope: believing in God, seeing life as it is, making sense of life, living full of life, having future perspective, adhering to treatments, and trusting in physicians.
Conclusions: The findings indicated that most breast cancer patients had positive attitudes towards life and they built up a logical account of their conditions, life, family relationships, accomplishments, and their treatments. The findings confirmed that hope is linked to coping that might buffer the stress and thus improve quality of life in cancer patients.

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SURVIVORSHIP AND HOPE: A QUALITATIVE STUDY AMONG BREAST CANCER PATIENTS

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Objectives: Survivorship may impose different experiences to cancer patients. This study aimed to examine the relationship between survivorship and hope in breast cancer patients in Iran.
Methods: A qualitative study was carried out to investigate on the relationship between survivorship and hope in breast cancer patients. A sample of women with breast cancer attending to Iranian Centre for Breast Cancer were entered into the study. In-depth interviews were carried out to collect data. Interviews were recorded, transcribed, and thematic analysis was performed.
Results: In all 34 breast cancer patients were interviewed. The mean age of patients was 49.2 (SD=19.8). Time since diagnosis ranged from 6 months to 12 years. Most patients diagnosed with stage II (n=18, 54%), 8 patients with stage I (23%), and the remaining 8 patients with stage III (23%). Nineteen patients received radical mastectomy (56%), and 15 patients (44%) received conservative surgery. Several themes emerged from the analysis. Breast cancer survivors indicated that God, their family, work, and positive thinking were the most important sources of hope and living purposefully.
Conclusions: The study results suggest that faith, a sense of fulfillment, relationships, roles, and the purpose of life might prevent the disorder of meaning and hope (demoralization) among cancer survivors.

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ASSESSING 2-MONTH CLINICAL PROGNOSIS IN PATIENTS WITH SOLID TUMORS: FIRST RESULTS OF PRONOPALL STUDY

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Background: In 2008, we published our results of a prognostic score defined by 4 factors (Karnofsky index, number of metastatic sites, serum albumin and LDH levels) in 177 hospitalized patients correlated with a survival rates at 2 months (JCO 08).
Methods: Multicentric trial with a high proportion of outpatients to validate this score in prospectif with performance status (PS)
Results: Between October 2009 and October 2010, 302 patients were included from 16 institutions. Inclusion criteria: adults patients with a solid tumor in palliative setting and with one or more of the three following criteria: life expectancy less than 6 months, PS ≥2, evidence of progressive disease during palliative chemotherapy. At this time, 146 (48%) patients are evaluable. Median age 64 years [37–87], women 60%, men 40%. PS 0–1 (43%), PS 2 (40%), PS 3–4 (17%). The most frequent primary sites:

breast, colon/rectum and lung. One metastatic site (31%), two (37%), more than two (33%). Median LDH level: 362 ui/l [118–1314]. Median level of serum albumin: 36 g/l [20–54]. According the prognostic score, the 2-month survival rate and the median survival were 87% and 306 days [195–417] (population A, 72 patients), 60% and 75 days [53–97] (population B, 62 patients) and 18% and 15 days [7–23] (population C, 12 patients). These three populations are statistically different (p<0,0001).

Conclusions: PRONOPALL confirms the three prognostic profiles defined by combination of theses four factors and is useful in daily practice

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TREATMENT EFFECT OF BISPHOSPHONATES IN THE PREVENTION OF SKELETAL EVENTS IN BREAST CANCER PATIENTS WITH OSTEOPOROSIS

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Objectives: To assess efficacy and safety of zoledronic acid in breast cancer patients receiving adjuvant hormone therapy with osteoporosis and at high risk of skeletal events.

Methods: Open prospective non randomized phase II study.

Eligibility criteria: Histologically confirmed estrogen-*receptor positive* breast cancer; range 18–75 years; stage I-III; any grading; osteoporosis; adjuvant *hormone therapy with tamoxifen*±LHRH analogues or aromatase inhibitors. At baseline all patients underwent the following assessements: DEXA, orthopantomography and dental examination; blood levels of VEGF, IL-8, IL-6, TNF-alpha, lymphocytes sub-populations, bone alkaline phosphatase, osteocalcin, osteopontin, osteonectin, N- and C-terminal telopeptides, bone sialoprotein, vitamin D, PTH, calcemia, phosphoremia (screening). Eligible patients were then treated with zoledronic acid (5 mg once/year) for two years. The above evaluations were repeated monthly in year 1and every 3 months in year 2. Preliminary results. Forty-six patients, all female, underwent the preliminary interview and 31 completed the screening: 12 were eligible (3 of them did not give their consent to participate to the study). Out of the 12 eligible patients, all postmenopausal, 2 had stage I, 8 stage IIA, 1 stage IIB, 1 stage IIIA*; 3 had negative and 9 positive lymph nodes; 10 underwent quadrantectomy + homolateral lymphadenectomy and 2 radical mastectomy; 3 had c-erb-B2 positive tumors and received trastuzumab; all patients underwent adjuvant radiotherapy and are receiving letrozol; 9 received anthracycline-based adjuvant chemotherapy (3 of them in association with taxanes); 4 had already received oral bisphosphonates.*

Conclusions: *The present abstracts reports preliminary data relating to screening phase. The study is ongoing.*

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TREATMENT OF PAIN IN PATIENTS AFFECTED BY CANCER ON THE DEPARTMENT OF ONCOLOGY, CLINICAL CENTER BANJA LUKA

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Introduction: Pain is the most difficult symptom of malignant disease, the most scared one by the patients and their families.

One definition of pain is that "Pain is whatever the patient says it hurts and is localized wherever the patient says he feels"

The World Health Organization has defined the basic principles of application of drugs in the treatment of cancer pain, such as: use of analgesics in the mouth, the regular use of drugs: the schedule and not need, "Based on the stairs, " an individual approach, constant supervision.

Objective: Based on the steps of analgesia to determine the practical application of analgesics in patients with cancer treated at the Oncology Clinic.

Methods: The study conducted at the Oncology Clinic in the period 01.01.2010-01.01.2011. During the investigation dealt with 31 patients, 15 men and 16 women.

Results: The patients average 58 years of age. On our clinic we applied drugs from the group of anti-inflammatory and non-steroidal medications (NSAIL) and mild opiates in 19 patients through oral route.Parenteraly we also apply the medication from these groups in 21 patients.Strong opoids were applied subcutaneously in 6 patients and by transdermal patches with Fentanil in 4 patients.

Conclusion: The most frequently used product from a non-steroidal anti-inflammatory group was Ketoprofen and the

main route was parenteral, with mild opioids that was Tramadol orally, and with strong opoid morphine subcutaneously, and fentanil patches transdermaly.In observed patients we achieved complete analgesia in more than 80% cases.

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CAPACITY BUILDING IN PALLIATIVE CARE—A MISSING LINK IN THE DEVELOPING COUNTRIES

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· Most patients come to the health care facility already in the advance stages thus requiring specialized care which is limited.
· There are few nurses and other health care professionals in palliative care yet the cancer case are on the rise.
· Having worked at the gynecological ward at MTRH/ELD/ Kenya 1:10 nursing staffs are trained to give this care. Thus an education initiative to improve palliative care providing nurses with training in palliative care so that they can give their essential information to practicing nurses and nursing students.
Goals: To help advance access to palliative care for patients and family living in the regions and countries where these services are limited, thus reducing pain and suffering for many patients.
Strategies:
· Help develop regional palliative care centers
· Have educational activities and sensitization programs

803
NON-COMMUNICATION OF PAIN: IS THERE AN AGE EFFECT?

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Objectives: Several studies documented that the likely to complain of pain decreased with age. As part of epidemiological survey on inpatients with pain (ECAD_O), current study aimed to evaluate which factors were associated with poor pain-communication.
Methods: A cross-sectional multicentre (48 Italian hospitals) survey on patients receiving analgesics was performed. Demographics-clinical-therapeutic data were collected. Pain intensity during the previous 24-hours was recorded as well as its possible communication to health-care-professionals (HCPs).
Results: Among 3854 inpatients receiving analgesics, 3285 (85.2%) were interviewed. Elderly patients (>=65ys) answered to interview less frequently than younger ones (34.4% vs. 47.2%;$p<0.0001$). The main reasons of non-response were incidental (patient asleep or out of the room, 28.9%) or clinical (impaired cognitive performance, 20.4%).
Among responders, 2821 patients (85.9%) had pain during the previous 24-hours; 79.3% of these patients (2236/2821) complained of pain to HCPs. Elderly patients had communicated more frequently than younger people (81.8% vs. 76.4%;$p<0.0003$).
Multilevel logistic regression, adjusted for patients (gender, pain type, pain intensity) and care-setting characteristics (wards, "Pain-Free-Hospital" project), showed that elderly age was not associated to an increased risk of non-communication (OR=1.05;95%CI:0.85-1.30;$p=0.6796$). Moderate pain intensity (OR=3.82;CI95%:2.48-5.88; $p<0.0001$), non-cancer pain (OR=1.62;CI95%:1.07–2.44;$p=0.0234$) and stay in hospital without "Pain-Free-Hospital" project (OR=2.08;CI95%:2.48–5.88; $p<0.0001$) resulted independent factors associated with this risk.
Conclusions: Our results showed that the elderly were less frequently available/able to be interviewed than younger patients. Conversely, older respondents complained of pain more often than younger patients. Increasing the nursing and medical attention to pain is essential to foster communication of elderly patients.

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CANCER, SEX LIFE AND SEXUAL HEALTH

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The sexual dysfunctions affect a significant proportion of patients with cancer and affect quality of life of patients and couples. According to several studies, these problems may persist long time after treatment.
Too often considered taboo, sexuality seems to be overshadowed in the daily practice.

Objectives: Develop a specific guidelines that allows:
· Provide health professionals with the prerequisites that enable them to identify sexual problems and to better address this issue with the patient/couple
· Sensitize health professionals to the issue of sexuality that they incorporate into their daily practice, to prevent/treat any sexual dysfunction in patients with cancer.
Method: Constitution of a multidisciplinary team including oncologists, urologists, gynecologists, sexologists, psychiatrists, nurses, psychologists.
A first meeting helped to define the objectives and methodology.
Conducting a review of medical literature on sexuality in the context of cancer.
Consideration of experiments performed by some hospitals in France.
After this first step, a frame has been proposed and discussed within the group and validated.
This work was presented in workshop and validated in plenary session during the National Days Care Support organized by AFSOS[1], and shared during these days with professionals of all French cancer networks.
Conclusion: The first part of these guidelines that we presenting are a useful tool for integrating the questioning of life and sexual health of cancer patients in the daily practice of health professionals. [1] French Association for Cancer Care Support

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INCIDENCE AND MANAGEMENT OF RADIATION PROCTITIS FOLLOWING HIGH DOSE 3D CONFORMAL RADIOTHERAPY

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Purpose: To evaluate incidence/treatment results of acute and late radiation proctitis and its impact on QoL.
Methods: We evaluated consecutive patients with prostate cancer in our institution with prospective data collection for acute and late toxicity, QLQ-C30 and IPSS. Patients were intensely advised regarding all aspects of optimized supportive care, were visited weekly during treatment and filled in the questionnaires before RT, at the end of RT and in the follow up at 6 weeks and once every year.
Results: We included 81pts. with 66 Gy and 40 with 77,4 Gy. In the low dose group (the high dose group, respectively) the incidence of acute proctitis were 54% (62%) grade II and 15% (20%) grade III. At 6 weeks there were 16% grade II proctitis (25%) and none III°. Overall quality of life did not change from start of treatment compared to 6w. IPSS score was worse at end of treatment in 60% (65%) and at 6 weeks [43% (32%)]. During follow-up including coloproctological examination, we observed late proctitis II° in 8,5% (12,5%), III° 2,5% (2,5%). Local treatment consisted of steroids, mesalazine, 5-ASA or metronidazole with local anaesthetics, applied in a local standardized protocol extracted from national guidelines and was effective in 90%.
Conclusion: Incidence of early/late proctitis is not reduced compared to the literature; this might be due to the close clinical observation and extensive documentation. Late radiation proctitis is a severe complication; supportive care can be optimized by standardized protocols respecting the actual clinical guidelines.

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THE ROLE OF ALKYLATING DRUGS IN THE CONTROVERSIAL SURVIVAL FOR INDUCTION CHEMOTHERAPY

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Objectives: The advanced stage cancer management of oral squamous cell cancer (OSCC) are combination of chemo-radio- and/or surgical therapy. In spite of radical use of combined therapy survival rate remained disappointing. In spite of the chemotherapy effectivity against OSCC that is not questionable the neoadjuvant usage result is controversial in different studies. The aim was to evaluate the role of an alkylating drug in the controversial result.
Methods: An alkylating drug (mitolactol) content chemotherapy protocol (bleomycin-vincristin-mitolactol-metotrexate BVMM) was compared (180 in patients) on without mitolactol (BVM; in 30 patients) chemotherapy. All of the patients were treated with three cycles of chemotherapy before operation. High-risk patients were irradiated postoperatively.The 3-year tumor-free survival was observed.
Results: The primary recurrence was for BVM 10%; BVMM 12%. Metastasis recurrence was BVM 13%; BVMM 30%. The tumor-free survival showed significant difference (p=.033) caused by higher rate of regional metastases.
Conclusion: In the controversial results of induction chemotherapy seems to be one of the most important factor the late side effect (high regional metastases) of alkylating drugs.

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ASSESSMENT OF MIDDLE AND LONG-TERM QUALITY OF LIFE IN FRENCH YOUNG BREAST CANCER WOMEN USING THE WHOQOL-BREF

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Background: The aim of this study was to assess factors associated with quality of life (QOL) in the middle and long-term follow-up after breast cancer (BC) within young women.
Methods: Since September 2005, all consecutive women included in the National Health Insurance Fund registry with a diagnosis of primary BC, aged 18–40 years and living in South-Eastern France, have been asked to participate in a 5 year follow-up study, including telephone interviews. 10, 16 and 28 months after diagnosis, physical, psychological and social QOL were assessed using the WHOQOL-BREF.
Results: Of the 234 women, 60.7% had a stage II/III tumour, all had surgery, 78.6% chemotherapy and 91.0% radiotherapy. 10 months after diagnosis, besides depressive symptoms and the presence of co-morbid conditions, all QOL domains were mainly influenced by social factors (employment, couple life, children) while no medical factors impaired QOL. 16 and 28 months after diagnosis, the degradation of body image impaired all three domains of QOL. The sequels of BC treatment (hormonal therapy, surgery and radiotherapy) were also strongly associated with impaired physical QOL, and to a lesser extent with psychological QOL. A linear mixed model also showed a decrease of social QOL between 16 and 28 months.
Conclusion: The WHOQOL-BREF gave us the opportunity to highlight factors related to impaired subjective well-being of women, and not only the impact of disease and treatments, providing the possibility to intervene to reduce the effects of cancer in a more comprehensive way among an age-group of women facing multiple challenges.

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COMPARATIVE STUDY INVOLVING PATIENTS, FAMILY MEMBERS AND CAREGIVERS TO EVALUATE PERCEPTION OF PAIN AND ITS MANAGEMENT

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Objective: The objective of the study was to identify the mental representations and behaviour of patients, family members and caregivers about cancer pain. The results of this survey were used to develop the objectives for a therapeutic educational program about pain related cancer.
Methods: 60 persons were interviewed: 17 patients, 11 family members, 22 caregivers, and 10 physicians. This survey involved four 2-hours focus groups (7 groups) with a topic guide to standardise data collection. Data were recorded on tape, transcribed and analysed using sociological comparison and thematic categories.
Results: The study highlights a major difference in the representations that caregivers and patients have about pain. Patients express pain subjectively, whereas caregivers search for an objective interpretation of the patients' complaint about pain.
Members of the family have difficulties to conversing with patients about pain. They are mainly opposed to morphine as treatment. Their knowledge about the active analgesics is poorly developed.
Conclusions: Development of patient education means a new contract in which the patient is recognised as a partner in the decision-making process. This study shows that a change in how caregivers perceive their role is required. From the patients' perspective, the development of skills in the communication and the management of pain need also to be developed. Members of the family should be associated with therapeutic patient education in order to avoid a bridle to adoption of new comportment.

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INFLUENCES OF MEDICAL SUPPORT IN POST CANCER SOCIAL REHABILITATION: A COMPARATIVE AND QUALITATIVE STUDY AMONG YOUNG WOMEN WITH BREAST CANCER

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Objective: "Life After Cancer" is one of the priority themes of the new French Cancer Plan 2009–2013. This study aims to examine the influence of medical care and support modalities on social rehabilitation after cancer. This influence can bear on both the perceptions of the patient regarding their post-cancer rehabilitation and the practical strategies for managing the social consequences of the disease.
Methods: Three hospitals have given their agreement to participate in this study.
The study will include two methodological aspects:
* A socio-anthropological study will be conducted among 60 women (20 per centre)
- Aged 50 years or less;
- Treated by surgery, adjuvant chemotherapy and radiotherapy for non metastatic breast cancer.
- Having completed the hospital care procedures since at least 6 months and within less than 2 years.

Two complementary methods of investigation will be used: 50% group interviews and individual interviews for the others.

* In parallel, a comparative organizational study will be conducted by a team specialized in studying the healthcare organization.

Expected results: To specifically assess the influence of the hospital care organization on the perceptions and the strategies for social rehabilitation developed by the patients. To obtain more detailed understanding of the processes leading to disparities in the use of programs to assist rehabilitation.

Conclusion: This study may lead to a refinement of the goals and of the means and tools used by ongoing and projected hospital programs.

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RECORD KEEPING IN PALLIATIVE CARE

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Background: Palliative care focuses on ameliorating patient's symptoms while providing supportive care to the patient and family. So much information passes between the team and the patient/family as the five domains are focused on.

Method: Retrospective study on 16 clinical audits and interviews with clinicians. The audits were for those who had been cared for >1 year. Information recorded, flow from one visit to another, focus on the different domains and the follow up were considered. This was followed by discussion with members of the team who had consulted the patient/family.

Results: Much information was lost between visits. The first, second and third visits had substantial information on the various domains but this reduced with time. By the 6th visit only the domains the patient had issues in were considered. The focus on the family was totally lost by the fifth visit.

Interviews revealed that clinicians could recall they always talked about all domains and engaged the families. Information was revealed that did not appear on the patients' records.

Discussion: Information recording is an important in the provision of quality palliative care and in communicating between the team members and the patient/family. Focusing on the five domains leaves one with a lot of information that recording becomes overwhelming. Simple assessment tools focusing on all domains and also on the family ought to be developed. This should be agreed upon by the team and be used at every visit to ease the passage of information and enhance follow up.

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INCREASED SALIVARY SECRETORY IMMUNOGLOBULIN A FIVE YEARS AFTER MODERATE-DOSE ADJUVANT CHEMOTHERAPY AND ANTIHORMONE TREATMENT IN BREAST CANCER PATIENTS

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Objectives: The aim was to assess if adjuvant chemotherapy (CT) and antihormone treatment (AT) in early-stage breast cancer patients influence salivary gland function five years after CT.

Methods: Forty-five consecutive breast cancer patients, eligible for adjuvant CT with cyclophosphamide, epirubicin or methotrexate, and 5-fluorouracil were followed before and during CT, six months, one and five years after CT. Patients with hormone receptor positive tumours (oestrogen and/or progesterone receptor) received tamoxifen and/or aromatase inhibitor for five years after CT. Xerostomia prevalence, unstimulated (UWS), paraffin chewing-stimulated (SWS) whole saliva flow rates and 1% citric acid-stimulated parotid flow rate (SPS), and secretory immunoglobulin A (sIgA) output were measured.

Results: Thirty-seven (82%) patients had AT following CT. Fourteen patients (31%) were lost at 5-year follow-up. SIgA output decreased significantly during CT, returned to baseline one year after CT, and was significantly higher five years after CT compared to baseline ($p<0.01$). Xerostomia increased during CT and stayed higher one and five years after CT compared to baseline ($p<0.05$). UWS and SWS decreased significantly during CT, yet both had returned to baseline levels one and five years after treatment. SPS did not change, and changes in sIgA output and xerostomia did not relate to AT as a binary variable.

Conclusions: At 5-year follow-up, sIgA was higher than baseline suggesting that it had been either lowered at baseline due to general disease status or upregulated after CT/AT. Also, xerostomia was more prevalent five years after CT in spite of normal salivary flow rates.

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DENTAL AND ORAL HEALTH IN PATIENTS APPLYING TO MEDICAL ONCOLOGY UNIT FOR SYSTEMIC THERAPY

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Objective: Dental and oral health status (DOHS) in patients to be receiving oncological therapy is an important, but frequently overlooked issue. Osteonecrosis of jaw, radio-osteonectrosis and dental infections are among those issues which could potentially hinder oncological care. They can be prevented signicantly by detecting and treating predisposing oral and dental factors. Our aim was to determine DOHS in our patients prior to onset of oncological therapy.
Patients and methods: We aim to have a dental evaluation and treatment in every patient possible. Patients were examined by the 2 dentists working at the nearby dental unit. To our registry, 67 patients with a median age of 67 (Minimum-maximum: 18–80) were recruited. Of them, 30 (44,8%) were male.
Results: The most frequent oncologial diagnosis was breast cancer (26, 38,8%), followed by lung cancer (17, 25,4%). Of the patients, 23 (34.3%) were planned to start biphosphonates. On the dental examination; 33 (49,3%) had gingivitis, 22 (32,8%) had periodontitis as gingival problems. Tooth decay and dental fillings were found in 35 (52,2%) and 20 (30,0%), respectively. At least one dental prothesis was present in 47 (70,0%). Dental therapy was recommended for 39 (%58,2) patients prior to any oncological therapy.
Conclusion: In unselected patients with cancer in amedical oncology clinic, dental problems seem frequent. In order to prevent more serious dental complications, it may be suggested that every patient should be examined by dental department prior to oncological treatment whenever possible.

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ORAL ADMINISTRATION OF ALPHA-LIPOIC ACID AS TREATMENT OF OXALIPLATIN-RELATED CUMULATIVE PERIPHERAL SENSORIAL NEUROPATHY: RESULTS FROM A MONOCENTRIC EXPERIENCE

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Objectives: Cumulative peripheral sensorial neuropathy (PNP) is a dose-limiting toxicity of oxaliplatin: after cumulative dose of 800 mg/m^2 about 15% of pts experiences grade 3 PNP (NCI-CTC 3.0). A previous report demonstrated the utility of sequential i.v. - oral administration of alpha-liphoic acid (ALA) as treatment of >G2 PNP. In our institution we evaluated the efficacy of oral administration of ALA in pts who developed >G2 PNP during oxaliplatin-based chemotherapy for metastatic colorectal cancer (MCRC).
Methods: From September 2009 to November 2010 we recruited 27 pts with MCRC who developed G2 (18 pts) or G3 (9 pts) PNP during oxaliplatin-based chemotherapy. Mean characteristics of pts: M:F=16:11, median age 69 years (49–77 yrs), median ECOG PS 1 (0–2), primary site: colon (19 pts), rectum (8 pts), median number of metastatic sites 2 (range: 1–4), median cumulative oxaliplatin dose 900 mg/m^2 (range: 400–1100 mg/m^2). In recruited patients ALA was orally administered at dose of 600 mg three times a day for eight weeks; intensity of PNP was biweekly monitored.
Results: After 8 weeks of treatment with ALA neurologic symptoms improved (by at least one grade) in ten pts (37%): such improvement was observed in only one patient with G3 PNP at the baseline. Median time to response was five weeks (range: 3–8 weeks), no toxic effects related to ALA administration were reported.
Conclusions: In our experience oral administration of ALA demonstrated an interesting activity in reducing oxaliplatin-related PNP. Larger, placebo-controlled trials assessing efficacy of ALA in this setting are warranted.

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DELAY IN BREAST CANCER DIAGNOSIS AFTER LACTATION PERIOD; TWO CASE REPORTS

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Objectives: These two cases are presented to emphasize the causes of breast cancer delay in post-lactation period.
Methods & Case report & Results: First case: 33 years old, graduated from high school. She visited obstetrics and gynecology specialist constantly with the complaints of flow in papilla, mass and pain in breast during 2 years after the end of lactation period. She used a long-term antibiotic therapy for the mastitis. She ongoing complaints visited a general surgeon. The same treatment was offered. The patient consulted another general surgeon, was diagnosed with breast cancer two years later. She had Modified Radical Mastectomy upon the diagnosis of stage 3.Second case: 30 years old, illiterate. She had complaints of nipple discharges about 2 years although she was not in lactation period. She showed it to the elder of the family (older sister-in-law) considering that she is older and more experienced than herself. "… she did not care about it because the older sister-in-law said it was not important, it could happen with every woman …" 2 years later, she felt a hard swelling in her breast by palpating. She consulted to a general surgeon because the nipple discharge turned into blood and purulence and she felt a hard swelling in her breast by palpating. The patient was diagnosed as a result of the tests and the patient had Modified Radical Mastectomy.

Conclusions: As in the period of lactation, we wanted to emphasize the breast cancer diagnosis delay for various reasons after lactation period.

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VIDEO ENDOSCOPY AS A NOVEL ENDPOINT IN RAT MODELS OF RADIATION-INDUCED PROCTITIS

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Radiation-induced proctitis is a common complication associated with radiation directed to the abdomen and/or pelvis in the treatment of rectal, prostate, or cervical malignancies. Rodent models are essential in the preclinical development pathway of potential pharmaceutical therapies for the management of proctitis. In classical proctitis models, the endpoints have been restricted to gross pathology and histology, both of which require animal sacrifice and preclude the continual tracking of disease course. The use of video endoscopy provides a method for daily visual assessment of the severity of proctitis as well as tracking of mucosal healing following a therapeutic intervention. We evaluated the utility of video endoscopy to assess the course and severity of radiation-induced proctitis in two models: a single acute dose of 20 Gy of radiation and a fractionated radiation model composed of 8 total doses of radiation of 4.5 Gy per dose (36 Gy total) directed to the rectum. Endoscopy results demonstrated that both acute and fractionated doses of radiation results in notable proctitis, characterized by changes in colon vascular pattern, friability, and active bleeding. Proctitis is apparent within 5 days of a single dose of radiation and within a single day of the final dose radiation in the fractionated model. In both models, disease severity reaches peak levels approximately 7 days following the final dose of radiation and disease persists for up to 2 weeks. Endoscopy provides for the continual tracking of proctitis throughout the course of disease and provides a clinically-relevant endpoint to assess disease severity.

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SLEEP DISRUPTIONS IN PATIENTS RECEIVING CHEMOTHERAPY

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Objectives: Fatigue and sleep disturbances are the most prevalent symptoms in cancer patients. They may be caused by physical illness, pain, chemotherapy, being in the hospital and emotional stress. Sleep disorders' four major categories that interfere with normal sleep patterns include: the inability to fall and stay asleep (insomnia), disorders of the sleep-wake cycle, central and obstructive sleep apnea.
Methods: There was conducted a literature review and critical analysis of the articles into international medical and nursing literature databases in the years 1999–2010, using the key words "sleep disruptions", "chemotherapy", "fatigue" and "nursing approach".
Results: In this literature review we enclosed 150 out of 250 references from which we observed that sleep disruptions and fatigue affected three out of four patients who were submitted to chemotherapy. The findings indicated that the younger patients with lung and breast cancer developed those problems. Nurses can teach those patients the basic strategies to promote good sleep.
Conclusion: In the future, nursing research should focus on the assessment of patients' sleep disruptions during chemotherapy. Nurses should intervene efficiently, educate and support patients in order to encourage them to confront with this invisible and frequent but quite significant clinical problem.

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"…I CAN'T TAKE A BREATH…PLEASE, DO SOMETHING…"

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Objectives: Breathlessness, is the subjective experience of breathing discomfort and a common symptom in patients with advanced cancer, with the prevalence reported, to increase in the last week of life.
Methods: A literature review was carried out and information was collected through medical and nursing literature, covering articles and books published from 2004 to 2010. We used specific key words as "breathlessness", "dyspnoea", "end of life care", "palliative care" and "cancer patient" in both english and greek language.
Results: We found 427 references, from which only 206 fulfilled the requirements for the insertion in this study. According to them, breathlessness is present in 70% of patients with cancer in the last few weeks before death and severe in 25% of patients in the last week of life.
Conclusion: Breathlessness is a complex symptom involving physical, psychological, emotional and functional factors. It induces feelings of anxiety, fear, panic and impending death. Its management could be divided into general measures, such as the explanation of the phenomenon to the patients and their reassurance for palliation and

specific measures. Among the last ones, we can count the pharmacological and non-pharmacological measures.

819
ANTI-EMETIC EFFECT OF ENCAPSULATED GINGER POWDER AS AN ADD-ON THERAPY FOR CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING. A STUDY FROM INDIA

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Background: Despite the widespread use of 5-HT3 receptor antagonist antiemetics, up to 70% of patients with cancer receiving emetogenic chemotherapy agents experience post-chemotherapy nausea and vomiting. Delayed postchemotherapy nausea and anticipatory nausea are poorly controlled by currently available antiemetic agents. Ginger has been used to treat numerous types of nausea and vomiting. Ginger has also been studied for its efficacy for acute chemotherapy-induced nausea and vomiting (CINV). However, its efficacy for CINV in a diverse oncology population is unknown.
Patients and methods: We performed a prospective trial in 600 episodes of chemotherapy in patients with cancer All participants received 2.0 g ginger daily for 3 days as an additional antiemetic to palanosetron, dexamethasone and/or aprepitant. The primary outcome was change in the prevalence of acute and delayed CINV. Secondary outcomes includenausea and severity. CINV was evaluated as per Edmonton's Symptom Assessment Scale and National Cancer Institute criteria respectively.
Results: Acute moderate to severe nausea was observed in 30 (5%) cycles. Acute moderate to severe vomiting was 5% cycles. Delayed moderate to severe nausea and vomiting was observed in 15%. No adverse reactions. Aproximately 80% of the cycles of chemotherapy (480 cycles) no event related to CINV occurred.
Conclusion: Ginger root powder was effective in reducing severity of acute and delayed CINV as additional therapy to palanosetron and dexamethasone and/or aprepitant in patients receiving emetogenic chemotherapy. It is easily available and a relatively cheaper substitute in developing countries.

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INTERACTIV - IMPROVING PSYCHOSOCIAL STATUS DUE TO VIRTUAL REALITY OF ADULT CANCER PATIENTS DURING HOSPITALIZATION: AN EXPLORATORY STUDY

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Objectives: The positive influence of physical exercise to improve patient-reported outcomes, i.e. symptoms, function or quality of life in cancer patients is well established (Knols et al., 2005; Schmitz et al., 2005). However, it remains challenging to motivate patients to adhere to physical exercise plans (Baumann, 2005). The aim of this study was to explore the use of Nintendo Wii® (Redmond, Washington) game console to influence on fatigue and well-being hospitalized adult cancer patients. Furthermore it was investigated if flow-experience can be induced.
Methods: The study was conducted as an exploratory trial using a prospective pre-post-design. Adult patients undergoing radio- and chemotherapy, ECOG>2 provided written informed consent were included. All patients (N=12) received physical training for five days/30 minutes per day with Nintendo Wii®.
Results: The use of an activating game console resulted in high flow-experiences. Psychological well-being improved significantly in all dimensions and fatigue improved significantly in three dimensions (general, physical, activity). Using ANCOVA the mental fatigue-scores significantly decreased, when controlled for flow-experiences ($p<0.05$).
Conclusion: In summary, our study showed that an activating game console in the treatment of cancer patients in a hospital setting was effective to improve fatigue and mental state. It is possible to induce flow-experience despite of the hospital environment in using virtual reality. Future research should focus on controlling the here shown evidence in experimental study designs.

822
APREPITANT PLUS PALONOSETRON AS SALVAGE THERAPY FOR CINV INDUCED BY MODERATELY EMETOGENIC CHEMOTHERAPY IN CANCER PATIENTS

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Background: Despite the efficacy of 5-HT3-antagonists prophylaxis nausea and vomit are still among the most common chemotherapies-induced toxicities. Aim of the present study was to evaluate the efficacy of adding aprepitant in patients refractory to prophylaxis with 5-HT3-antagonists and dexamethasone.
Patients and methods: Between Genuary 2008 and November 2010 51 patients with a median age of 59 years

and affected by different malignancies (breast cancer: 23, lung cancer: 12; sarcoma: 6 ovarian cancer: 3; other cancer: 7) were enrolled. Aprepitant was given at 125 mg day 1 and 80 mg day 2–3. Palonosetron was given at 250 mcg single dose day 1. Dexamethasone was given at different doses (12–20 mg), but the dose remain the same during the whole treatment. The recruited patients were refractory to antiemetic therapy according to ASCO guidelines and developed at least G2 nausea and/or vomit after the fist chemotherapy course.

Results: After aprepitant addition the number of patients with G3-4 nausea decreased from 31 (61%) to 4 (8%) and those with G2 nausea from 20 (39%) to 6 (12%) ($p< 0.0001$). All patients received aprepitant for more then two courses (3–8) and its efficacy was consistant during all chemotherapy cycles.

Conclusion: Aprepitant has demonstrated a significant activity as salvage therapy in patients with nausea and vomit refractory to prophylaxis with 5-HT3-antagonists and dexamethasone following platinum and nonplatinum-based chemotherapy and its efficacy persists over multiple cycles.

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APPLICATION OF QLQ-OG25 ON NEWLY DIAGNOSED GASTROESOPHAGEAL CANCER PATIENTS IN IRAN

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Background: Gastric and oesophageal cancers account for more than 15% of the total cancers registered in Iran in 2008. Measuring health related quality of life (HRQL) among this group of patients may help the health professionals and caregivers to identify the most troublesome symptoms to alleviate patients to confront better with the disease. The aim of this study was to test the psychometric properties of a recently developed specific HRQL tool in Iranian patients.

Method: In all, 204 patients admitted to referral hospitals in northeast Iran were approached to complete the Farsi version of QLQ-OG25 questionnaire, which passed through the standard translation process, along with the core EORTC-C30 instrument either on their own or within interviews.

Results: The internal reliability (Chronbach's alpha) of six components of QLQ-OG25 which were dysphagia, eating restrictions, reflux, odynophagia, pain and anxiety, were higher than the originally reported figures, ranged from (0.75-0.89). Seventy percent had TNM staging, among them 5% were in stage 1, 36% in stage 2, 20% stage 3, and 39% in stage 4; QLQ-OG25 better distinguished between tumour stages. Only anxiety scale was able to differ tumour site, i.e. thoracic oesophageal cancer versus stomach ($p< 0.05$). Patients were divided into two groups based on their 'physical functioning' index in EORTC-C30, where all QLQ-OG25 subscales could distinguish between the two groups ($p<0.001$), which confirms the concurrent validity of the specific tool.

Conclusion: The Farsi version of QLQ-OG25 has acceptable psychometric properties and is recommended to be administered in patients with upper GI cancer.

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APPLYING A COMBINATION OF ANALGESICS (TRAMADOL 37,5 + PARACETAMOL 325) FOR THE TREATMENT OF CANCER PAIN

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Pain is an important problem for cancer patients. It occurs in most patients with advanced and metastatic disease and significantly affects the patients general condition and quality of life. So far it has not found any painkiller that eliminates all kinds of pain in all patients. Acting through different mechanisms of blocking pain receptors, combined analgesics lead to reduced average daily pain, reducing the number of episodes of acute pain, improves the functional condition of the patient and have no significant accompanying side effects. Our study evaluated the application of combined analgesic tramadol 37.5 + paracetamol 325 mg in 30 patients at the Oncology Clinic Clinical Center in Banja Luka has proven its effectiveness in treating cancer patients with moderately severe and severe pain. Good tolerance and few side effects makes this combination an attractive alternative to stadnard opoid analgesics

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CENTRAL AND PERIPHERAL VENOUS PORT CATHETERS: EVALUATION OF PATIENTS' SATISFACTION UNDER LOCAL ANAESTHESIA

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230 cancer patients were randomized in a trial comparing surgical cephalic vein cutdown (CVC) chest port insertion to venography-guided arm port insertion (API). Two Qol questionnaires were given to the patients 3 months after

implantation: the EORTC QLQC-30 questionnaire and a dedicated one. Among all the evaluated items (ie: psychological, sociological and physical), only five proved to be statistically significant. Using the Visual Analogical Scale, overall satisfaction was pretty high in both groups: 7.8 vs 7.99 (CVC vs API). Insertion procedure was less painful in API patients. Patients experienced a "foreign body perception" more frequently with their port placed on the chest (72.2% vs 56.5%). Chest port device more frequently induced bra inconvenience (female over 60 years ($p=0.02$)), and discomfort when wearing a security belt or a strap bag. Shoulder bag discomfort was felt more important in female than in male patients ($p=0.03$). 16% of chest port patients felt the device accessibility difficult versus only 3.2% of arm port patients ($p<0.05$). Nevertheless, during drug infusion, CVC port patients felt more comfortable than API patients (47.2% vs 30.10%) most probably because of a higher mobility of the arm compared to the chest and a lower stability of the implanted Huber needle. Nurses were also given a questionnaire. Chest port device was found more stable, easier to puncture, namely in a sitting patient, rather than the arm port device. Cosmetic appearance and discretion of the device were found to be similar in the two groups.

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EVALUATION OF THE CAREGIVERS' QUALITY OF LIFE SCALE IN CANCER PATIENTS

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Objectives: Cancer disease greatly affects the quality of life (QOL) of patients and caregivers. The knowledge about the cancer patients' caregivers' QOL is limited. This study aims to reveal the patients' caregivers' QOL by assessing the caregiver QOL index cancer scale (CQOLC).

Methods: Totally 257 caregiver were included in this study. For each patient only one caregiver was performed the CQOLC score.

Results: The mean age of patients and caregivers was 58 and 43 respectively. The 54,9% of the patients and the 53,7% of the caregivers were female. We used pearson correlation and independent t test for analysis. There is no correlation between age and the items of the CQOLC index. There is no significant difference between patient's gender and the CQOLC items, elapsed time after diagnosis, patient's and caregiver's age. There is significant difference between caregivers' gender and some CQOLC items. If the caregiver is female the total score and 4 subscales burden, disruptiveness, positive adaption is worse. Total score and 4 subscales did not show significance according to the cancer stages. No significant difference was found between caregivers that has blood relationship or not.

Conclusion: The QOL of caregivers of the cancer patients is not examined adequately in Turkey. The CQOLC scale has been shown to be both valid and reliable and Turkish version has been validated. By using this we can identify the caregivers that are more susceptible for developing cancer related distress and lead them earlier for psychological support to overcome this distress.

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PROVIDING PALLIATIVE CARE IN MOLDOVA: 10 YEARS OF GROWING ACTIVITY

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The Charity Foundation for Public Health "Angelus Moldova" was founded in 2000 as an independent non-governmental, non-political and not-for-profit organisation. Its main goal was to create a new system of medical-social and psycho-emotional support for incurable cancer patients and their families in the capital and throughout the country. Hospice "Angelus" is a part of the Foundation's project and has been running since November 2001. It provides palliative care services by the means of the qualified hospice mobile team in patients' homes, by telephone and at the office. Most of the patents live in Chisinau, but many from rural regions of the country also benefit from the service.

Since October 2008 a home based paediatric palliative care service has been running which covers children from the capital as well as children from the rural districts.

All the time of activities the patients were provided free of charge with medication and different medical accessories, including stoma bags and breast prostheses.

Besides the patients' services, the Foundation also actively provides education on palliative care for medical professionals and the general public.

Since October 2009 the Foundation has been actively involved in the establishment, development, support and running of home based palliative care service for incurable cancer patients in three rural regions of the country.

Annually the Foundation develops and runs several fundraising and charitable activities in order to raise public awareness about palliative care and to collect funds to support incurable cancer patients and their families.

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THE IMPACT OF SPIRITUAL-PAIN IN QUALITY-OF-LIFE (QOL) OF ADVANCED-CANCER PATIENTS (ADCA) AND THEIR CAREGIVERS IN THE PALLIATIVE CARE SETTING

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Background: Spiritual-Pain may manifest itself as distressful symptoms in any area of a person's experience, including physical, psychosocial, or religious. Limited research has been done on spiritual pain and its impact in QOL in AdCa and caregivers. In this prospective cross-sectional study, we examined these associations.
Methods: We interviewed 100 AdCa and 43 Caregivers in our outpatient palliative care clinic. Spiritual-Pain was assessed using numeric-rating scales (0 = lowest, 10 = highest). They completed various validated questionnaires assessing QOL (FACIT-Sp-Ex, SBI-15R, CGQOL). Univariate and multivariate regression analyses were utilized in data analyses.
Results: The median age (range) for AdCa was 53y (21–85), 61% female, 74% were white, 88% were Christians, 4% Jewish and 4% Agnostic. And the median age (range) for Caregivers was 52y (21–83), 67% female. 78% were white, 17% African American, and 5% Hispanic. 91% were Christians, 86% were married. They were patients' spouse (58%), friend (12%), and child (14%).
Spiritual-Pain was reported in 44% of the AdCa and 23/40 (58%) of the caregivers, with a median(range) of 3(1–6) and 5(2–8) respectively. AdCa reported worse QOL[81(73–87) vs. 68 (59–80), $p<0.001$]. The caregivers with spiritual-pain expressed denial(3 v. 2, $p=0.01$), behavioral disengagement(3 v. 2, $p=0.011$), and dysfunctional coping strategies(19 v. 16, $p=0.02$) and worse QOL(CGQOL: 70 v. 51, $p<0.001$).
Conclusion: Spiritual-pain is highly prevalent in AdCa and caregivers. It affects negatively their quality of life and might affect the way they cope in their lives. This supports the importance of spiritual-assessment and supporting spiritual-needs of AdCa and caregivers. Further research is needed.

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DESCRIPTION OF AN INTERNET-BASED CLINICAL APPLICATION TO MANAGE CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV) IN AMBULATORY CANCER PATIENTS

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Objectives: To describe the process used to develop and implement a computer application which allows for the collection of CINV-related symptoms. To describe how this information can be used to aid in the identification of patient risk factors and other characteristics that may affect response to management of CINV. To describe the potential benefit of using a standardized systematic approach to collection of clinical information and assessing therapeutic outcomes in cancer patients.
Methods: With the assistance of a software developer, the CINV module was developed to reside within the Oncology Symptom Control and Information Resource (OSCIR), a currently established internet-based clinical application. OSCIR also contains modules for anaemia and neuropathy.
Results: We have successfully been able to implement a CINV module in OSCIR that consists of risk, symptom, intervention, and outcome documentation and provides algorithm-based management recommendations. Through the following several months, we will collect data on patient characteristics, treatment modalities, incidences of CINV, interventions, and patient outcomes related to CINV. Analysis of this information will allow for a better understanding of this chemotherapy-related side effect, but also how interventions made by health care professionals benefit patients.
Conclusions: The ability to monitor patients regularly in a systematic organized fashion using an internet accessible clinical application is expected to improve the management, documentation, patient education, and understanding for CINV. Installation of such a tool will also aid in the enhancement of patient care services in this setting. This module was made possible through the financial support of Merck Canada Inc.

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LOW TESTOSTERONE IN MALE PATIENTS WITH CANCER IS ASSOCIATED WITH DECREASED PHYSICAL FUNCTION

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Objective: Low serum testosterone concentrations are commonly observed in patients with cancer and have been shown to be associated with a host of cancer-related symptoms including weight loss, fatigue and weakness.

We aimed to determine how serum free testosterone concentration affects measures of physical function.
Methods: We quantified serum free testosterone in 74 male patients with cancer and compared 6-minute walk distance (6MWD) (n=74) and gait speed (n=37) between patients with free testosterone concentrations in the lowest quartile (L) and upper three quartiles (U).
Results: Patients in the lowest free testosterone quartile (0.1–11.7 pmol/L) had a significantly lower gait speed (L: 1.29±0.39 vs. U: 1.68±0.31 m/s, p=0.002) and 6MWD (L: 328±121 vs. U: 435±95 m, p<0.001) than patients in the upper three free testosterone quartiles (11.8–45.4 pmol/L). Linear regression analysis with free testosterone level (L vs. U) and age as independent variables revealed that 6MWD was explained by both free testosterone level and age (R^2= 0.251, p<0.001), whereas gait speed was explained solely by free testosterone level (R^2=0.266, p=0.006).
Conclusion: Our study shows that in male patients with cancer, extremely low serum free testosterone is associated with a significant decrease in physical function independently of age.

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EXTENDING PALLIATIVE CARE DEVELOPMENT IN RURAL AREAS OF MOLDOVA

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Taraclia is a region situated in the south of Moldova. It has a population of 45,786 inhabitants predominantly made of Gagauzian and Bulgarian ethnic groups.
In 2008 there were 462 cancer patients registered in the region. Out of them 102 were new cases and there were 54 cases of advanced and terminal clinical stages which represented 11.7% out of all the registered cases.
In October 2009, the "Angelus Taraclia" Association, an independent non-governmental, non-political and not-for-profit organization, launched an initiative to provide palliative care services for incurable cancer patients in the region.
During the year, 96 incurable patients received palliative care and social assistance. The patients were provided with medication and medical accessories free of charge.
The Association also developed and ran several fundraising and charitable events in order to collect money to support incurable cancer patients and their families and to raise public awareness about palliative care in the region.
Despite the apparent difficulties in rural regions, the project was considered as a successful pilot-project and sustainable for the region by the local community and national experts.
As a result of the success of "Angelus Taraclia" two further palliative care developments were initiated in Chimishlia and Oknitsa.
Chimishlia is a region in the central-southern part of Moldova and Oknitsa—in the north. Their population consists of 60,900 and 56,600 inhabitants accordingly. Their projects began simultaneously in October 2010 and are in operation.
All three projects were developed in tight collaboration with the Charity Foundation "Angelus Moldova".

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KNOWLEDGE ABOUT LYMPHEDEMA, RISK PERCEPTION AND PRIMARY PREVENTION IN BREAST CANCER PATIENTS

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Background: One in five breast cancer patient undergoing surgery with lymph node dissection and radiation therapy develops lymphedema. There are still no standards for diagnosis and treatment. Education of prevention is main approach to decrease this disabling complication of breast cancer treatment. The purpose of this study was to examine knowledge about lymphedema and risk perception among breast cancer patients.
Methods: A questionnaire-based survey was carried out among 125 patients undergoing the breast cancer treatment (60 persons with symptoms of developed lymphedema and 65 persons without signs of this complication). Knowledge about lymphedema was assessed with a questionnaire created for this study. Patients rated their risk perception and methods used in the prevention of lymphedema.
Results: The mean (SD) lymphedema knowledge score was 16.8% (4.6%) in urban patients with developed complication and 34.1%(6.8%) patients without lymphedema. Risk perception mean (SD) level was significantly higher in urban patients without lymphedem. Urban patients in both group were also more knowledgeable about lymphedema than rural patients. Primary prevention plan was ignored by 78% of patients with lymphedema and by 15% of patients without this complication of treatment.
Conclusions: The results indicate a low risk perception, absence of knowledge about lymphedema and primary prevention plan ignoring among breast cancer patients as a main cause of this complication. Persons with breast cancer must be informed about risk of lymphedema before cancer treatment and educational strategies need to be focus on primary prevention plan immediately after surgery with lymph nodes removal.

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METHYLPHENIDATE IMPROVES PSYCHOMOTOR SLOWING AND REVERSES THALAMIC HYPOMETABOLISM DOCUMENTED BY BRAIN ^{18}F-FDG PET SCANNING IN A PATIENT WITH ADVANCED CANCER

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Objective: We have previously demonstrated that patients with mild cognitive impairments present thalamic hypometabolism on brain ^{18}F-FDG PET scanning (PET-scan), and that methylphenidate can improve cognition in these patients. We hypothesize that its use may result in improvement of the patient's clinical status by increasing thalamic metabolism.
Methods: Amongst patients complaining of brain fog and presenting cognitive deficits as documented by a score of ≤8/9 on the short version of the Mini-Mental State Examination, one was evaluated cognitively using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) and physically using the Core Assessment Program for Intracerebral Transplantation, and underwent an PET-scan before and after the use of methylphenidate.
Results: A 52 year-old female, a neonatal ICU nurse, diagnosed with rectal adenocarcinoma with liver metastases in July 2009, was treated with neo-adjuvant chemotherapy, left hepatectomy and surgical resection. The patient complained of extreme fatigue, decreased concentration, impaired reading ability and difficulty in maintaining conversations. The patient showed below normal scores in the immediate memory and visuospatial/constructional RBANS indices, decreased coordination of the left upper and lower limbs. PET-scan demonstrated hypometabolism (decreased glucose uptake) of the left thalamus. After treatment with methylphenidate, the patient exhibited improved scores in the immediate memory and visuospatial/constructional and delayed memory indices, improved limb coordination, and normal glucose uptake in the left thalamus.
Conclusion: This case study suggests that methylphenidate improvement in cognition and motor function is associated with increased thalamic activity documented by increased tracer uptake as seen on ^{18}F-FDG PET scanning.

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SURVIVAL İN STAGE III B AND STAGE IV NON-SMALL CELL LUNG CANCER PATIENTS

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Objective: The aim of the study is the comparision of the effects of comorbidity factors on survival in stage IIIB and stage IV non-small cell lung cancer (NSCLL) patients aged 65 years and older or under 65 years.
Material and method: A total of 221 patients histopathologically NSCLC diagnosed at stage III B and and stage IV were included in our study. Patients were grouped as 65 years and older and under 65 years. The comorbidity situation of patients were evaluated by Charlson Comorbidity Index. The points of patients were evaluated between 0 (No commorbidity) to 10 (maximum comorbidity).
Results: 135 (% 61) of221 patients were under 65 years. In the 65 years and older group, comorbidities as chronic lung disease (% 38.4), coronary artery disease (% 24.4) and diabetes (%23.3) were seen more frequently and for 65 years under, chronic lung disease (% 26.7), diabetes (% 17.8) and 4 chronic renal disease (%9.6) were the most frequent complications. Evaluation of toxicities revealed that hematologic and non-hematologic toxicities were seen respectively as % 33.3 and % 33.3 in the group of 65 years and older. There were not any significance for the effect of comorbidity factors on survival between two groups.
Conclusion: In patients, as age increases, comorbidity factors and therapy-related toxicity increases; median survival of the patients are affected negatively and there were not any difference for overall survival related to age. Because the patients with high charlson comorbidity score have shorter survival, we must evaluate these patients carefully.

836
THROMBOPROPHYLAXIS IN CRITICALLY ILL CANCER PATIENTS: WHERE IS THE EVIDENCE? A SYSTEMATIC REVIEW

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Objectives: The incidence of venous thromboembolism (VTE) among critically ill patients varies from 22% to 80%. It is the most common complication and the second leading cause of death in hospitalized cancer patients, who have a 6–12 fold higher incidence of VTE than patients without a malignancy. Pharmacological prophylaxis has been shown to decrease the incidence of VTE by 50–65%. The purpose of this study was to investigate whether the use of thromboprophylaxis, compared to no prophylaxis, decreased the incidence of VTE in critically ill adults and to determine the most appropriate method of prophylaxis for critically ill cancer patients.

Methods: A systematic search for relevant articles was performed using The Cochrane Library, PubMed, CINAHL Plus, Science Citation Index, SCOPUS, and Ovid. Only randomized control trials (RCTs), retrospective, and prospective studies published in English, between 1980 and 2010, were included.
Results: Among the 17 studies identified, only 13 met criteria. Two were RCTs, 9 were prospective, and 2 were retrospective studies. Both RCTs showed a 50% relative risk reduction in incidence of VTEs among critically ill patients who received pharmacological thromboprophylaxis, as compared to a placebo. Cancer patients were excluded from these studies.
Conclusions: Pharmacological thromboprophylaxis in the critically ill significantly reduces VTE incidence. Critically ill cancer patients are at greatest risk of developing VTEs, yet these patients, especially those with thrombocytopenia, have been excluded from the studies. There is still lack of evidence to guide the clinician on the most appropriate method of VTE prophylaxis in this patient population.

837
DELAYED THROMBOLYTIC THERAPY IN ACUTE PULMONARY EMBOLISM (PE) IN CANCER PATIENTS: A CASE REPORT AND REVIEW OF THE LITERATURE

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Objectives: To increase awareness of strategies used to manage acute PE in cancer patients. These patients have not been included in the development of risk stratification tools used to determine who may benefit the most from thrombolytic therapy.
Methods: Case report
Results: A 75 year-old female with poorly differentiated invasive ductal carcinoma presented with cough, dyspnea, and syncope. CT scan of chest showed new bilateral multilobar PEs. She was admitted to telemetry and started on anticoagulation with LMWH, and required 80% oxygen via face mask where she had another syncopal episode associated with atrial fibrillation and hypotension. She was transferred to the ICU where she experienced acute deterioration, including respiratory failure, cardiogenic shock, and acute renal failure, requiring mechanical ventilation, vasopressor therapy, and a heparin infusion. A 2D echocardiogram revealed severe right ventricular (RV) dysfunction with RV systolic pressure >60 mm Hg. Due to increasing oxygen and vasopressor requirements, the patient received thrombolytic therapy. Within 2 hours, she developed profound coagulopathy, and within 36 hours, the INR was as high as 15. Her platelet count dropped 90% and the heparin infusion was discontinued due to concern for heparin induced thrombocytopenia. Over the next 48 hours, her coagulopathy improved, and bivalirudin was started. However, the patient continued to deteriorate and she died 7 days after admission.
Conclusion: There were only 11 RCTs comparing thrombolytics to standard anticoagulation in the treatment of PE. However, in hospitalized cancer patients, where venous thromboembolism is the second leading cause of death, no studies were found.

838
QUALITY OF LIFE AND ITS ASSOCIATED FACTORS IN LIVER CANCER PATIENTS AFTER RECEIVING NON-SURGICAL TREATMENTS

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Aim: Health care providers pay less attention on survivorship in liver cancer patients due to its high mortality rate. The aim was to explore quality of life (QOL) and its associated factors for liver cancer patients after receiving non-surgical treatments.
Methods: Data were collected three times including the day before discharge (T1), and during the fourth (T2) and eighth (T3) weeks after discharge by using a structured questionnaires to assess patients' QOL, symptom distress, anxiety, depression, and uncertainty at a teaching hospital in Northern Taiwan. Quality of life and its associated factors were examined by descriptive analysis and the significant factors with QOL at T3 were identified by generalized estimating equations.
Results: Patients with liver cancer (N=123) reported that symptom distress,anxiety, depression, and uncertainty decreased by time. Physical related QOL improved, but mental related QOL decreased after 8 weeks of treatments. The physical related QOL at T3 was associated with age, Barcelona Clinic Liver Cancer (BCLC) Staging, medical treatment, time since been diagnosed, dose of adriamycin, uncertainty and anxiety on the day before discharge. However, mental related QOL at T3 was associated with BCLC staging.
Conclusions: The level of symptom distress decreased by time and the physical related QOL ameliorated but mental related QOL deteriorated after 8 weeks of treatment. The BCLC staging was an important factors associated with mental related QOL after treatment within two months. Therefore, health providers should pay more attention about the patients's mental status with BCLC stage B after discharge.

842
PERCEPTIONS OF CANCER LOCUS OF CONTROL IN PATIENTS RECEIVING PALLIATIVE CARE

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Objective: To assess the psychometric properties of the Cancer Locus of Control (CLOC) scale on a Greek sample of advanced cancer patients.
Methods: The scale was translated with the forward-backward procedure to Greek. The CLOC scale was administered to 140 advanced cancer patients. It was administered twice, with a 3-day interval, to 100 (of the 140) eligible patients with advanced cancer. Together with the CLOC scale, the patients also completed the Greek Mental Adjustment to Cancer (G-MAC) scale. Confirmatory factor analysis was carried out using the AMOS 7.0 analysis. The reliability was assessed by the internal consistency (Cronbach's alpha co-efficients), test/retest (Spearman's r value) of the instrument, and inter-item correlations. Construct validity was assessed using the G-MAC scale, inter-scale correlations, item-scale correlations, and scales-total correlations.
Results: The homogeneity of the subscales proved to be satisfactory (α coefficient ranged from 0.713 to 0.786). Overall test-retest reliability was satisfactory at $p<0.0005$. Construct validity has shown moderate correlations with G-MAC $p<0.0005$. Interscale and inter-item correlations were satisfactory at $p<0.05$.
Conclusions: The results suggest that the Greek version of CLOC administered in cancer patients treated in a palliative care unit is a reliable and valid clinical instrument.

843
THE EFFECT OF SUPPORTIVE CARE PROGRAM FOR THAI PROSTATE CANCER PATIENTS

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The effect of nursing intervention by using a Supportive Care Program for prostate cancer patients was examined. A Supportive Care Program was prepared and carried out. The patients was able to use it during hospital and post discharge. The space to fill in opinions of patients and families was placed at the front. Several nursing intervention items were post on the board and pamphlet which patient were able to add or choose items so that patient, even old patient, were able to provide a certain level of nursing care. A Supportive Care Program was made into a detail and picture so that the patient could see it at a glance. By utilizing a Supportive Care Program, individual problems were clarified and the time when nursing intervention was required was also clarified. As the result, the attitude toward treatment became active, as the goal of a discharge from hospital and the purpose of treatment became clear. As patients and the families were willing to come for advice, the program was useful to create trustful relations.

844
CANCER CACHEXIA IN LUNG CANCER

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Introduction: Cancer cachexia is characterized by anorexia, muscle wasting and increased resting energy expenditure. It represents a major clinical problem regarding its prevention, identification and treatment.
Purpose: The purpose of this review is to summarize data concerning cancer cachexia among lung cancer patients. The potential influence of cancer cachexia on overall survival is also examined.
Materials and methods: A systematic literature search was performed in Medline and Embase. Several review articles and studies met the inclusion criteria.
Results: Our search yielded one hundred studies and review articles about cancer cachexia among lung cancer patients. The prevalence of cancer cachexia is high among patients with advanced lung cancer. Fundamental in the pathophysiology of this syndrome is the interaction between the host and the tumor. The tumor cells release pro-inflammatory cytokines and generate specific cachectic factors, the cachexins (proteolysis inducing factor and lipid mobilizing factor) while the host shows an acute phase protein response with prototypical reactant the C-reactive protein elevation.
Treatment of cancer cachexia comprises progestins and corticosteroids as appetite stimulants, while under investigation are eicosopentaenoic acid diester, adenosine 5′ triposphate infusions and selective cyclooxygenase-2 inhibitors.
Lung cancer cachectic patients have worse quality of life, weaker response to anticancer therapy and shorter survival.
Conclusions: Cancer cachexia in lung cancer is a multifactorial process and requires multimodal therapy. Treatment of cachexia improves quality of life, increases survival and reduces medical costs. Further studies need to be conducted in order to understand cancer cachexia mechanisms and to develop effective anti-cachectic agents.

845
CUTANEOUS MANIFESTATIONS OF INTERNAL MALIGNANCIES

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The skin often plays a significant role in the detection of internal malignancies. Cutaneous manifestations of internal cancer may reflect direct involvement of the skin by the tumor, i.e. the skin is infiltrated by malignant cells that represent metastatic or local spread from an internal malignancy (eg, metastatic lung or gastric cancer) or signs of paraneoplastic syndromes. Paraneoplastic syndromes are rare disorders that are triggered by an altered immune system response to a neoplasm or by circulating factor(s) or presumed factors produced by the underlying cancer. Generally, the onset and course of the disease will closely correlate with the malignancy, as described in Curth's original criteria for paraneoplastic syndromes. The suspicion of underlying cancer should be higher under certain circumstances: older age, failure of the cutaneous problem to respond to conventional therapy, systemic symptoms such as fever or weight loss, and personal or family history of cancer. Cutaneous lesions most likely to be associated with internal malignancies are those associated with dermatomyositis, acanthosis nigricans, necrotic migratory erythema, herpes zoster, multiple eruptive seborrheic keratoses, Sweet's syndrome, erythroderma, xanthoma, pemphigus vulgaris, and erythema gyratum repens.

Although some of the skin manifestations of internal malignancy are relatively rare, their identification may often be made at a crucial time, when intervention may save a life.

846
SPIRITUAL CONCERNS DURING THE CANCER JOURNEY

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Introduction: The diagnosis of a life threatening illness leads a patient to undertake a two-fold journey:

1. The outer journey of visits to hospital, treatment, rehabilitation, home care and perhaps hospice or periods at home.
2. An inner journey of feelings, emotion, psychological reactions which lead to questions of causation, and a desire to make sense of the experience as well as of the life that has been lived.

This search for meaning is not unfocussed, but is related to issues of existence and purpose and are the bedrock of spiritual care.

Aim: To explore these journeys and relevance to spiritual care.

Spirituality is not always expressed in religious framework so must value non-religious and secular expressions of existential questions. This is important when we think about assessing spiritual need. Many of the developed assessment tools are valuable in the field of research, but less so clinically. We need a way to explore together which allows the patient to tell (or re-tell) their story, identify what is important for them now, and the sources of support and coping which may help them. Research evidence supports this and will be explored.The needs of family and professional care givers are important since such explorations are difficult if we are not aware of how we make sense of personal life experiences.

Conclusion: If accept holistic approach important in palliative care and hospice then spiritual care is a responsibility of the whole team and to be addressed at all stages of the disease.

848
AN EVIDENCE BASED GUIDELINE FOR PROFESSIONALS IN ONCOLOGY AND REHABILITATION IN THE NETHERLANDS

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Purpose: To describe the development of a nationwide evidence based guideline for multidisciplinary cancer rehabilitation during and after curative treatment and in the palliative phase in the Netherlands.

Relevance: The number of cancer survivors increase every year in the Netherlands (from 366.000 in the year 2000 to expected 692.000 in 2015). There is an increasing awareness of the importance of cancer rehabilitation to maintain or achieve optimal physical and psycho-social health. Cancer rehabilitation is commonly available in the Netherlands, however evidence based guidelines for rehabilitation of cancer patients and survivors are missing. Such guidelines could improve the quality of life in cancer patients and survivors.

Description: The guideline 'Cancer rehabilitation' was developed using a systematic method for evidence based guideline development. Based on an online survey among

health care professionals and a conference with cancer patients and survivors, ten key questions regarding cancer rehabilitation were identified. A multidisciplinary guideline workgroup, including patient representatives, developed the guideline addressing these ten questions. A systematic literature search was performed and relevant evidence was selected, analysed, and summarised. Conclusions and considerations were added. Finally, recommendations were formulated regarding triage, diagnostics strategy and referral to rehabilitation programmes, evaluation of cancer rehabilitation and patient empowerment.

Evaluation: This guideline offers recommendations for professionals caring for cancer patients. Analysis of the literature revealed a lack of available evidence in relevant topics. Therefore recommendations for research were included in the guideline.

Implications: Rehabilitation care should be expanded with defined rehabilitation programmes during cancer treatment and in the palliative phase.

850
REPORTED SCOPE OF PRACTICE VARIATIONS

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The American Dietetic Association implemented the Scope of Dietetics Practice Framework to guide dietitians with performance standards. Dietitians (n=163) gave their opinions about variable practice requests. The findings show that 67% (n=107) were asked to write diet orders, 85% (n=136) were asked to make tube feeding decision, 61% (n=97) were asked to write parenteral nutrition orders, 19% (n=29) were asked to feed patients, 40% (n=64) were asked to write prescriptions, and 12% (n=19) were asked to care for gastric-tube sites. Dietitians who worked in medical centers (p=.01) performed more clinical practice that are considered variable to scope of practice guidelines.

852
ACTIVATED CANCER THERAPY—COMPASSIONATE TREATMENT FOR SERIOUS DISEASE

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Presented is a novel, non-toxic approach for the amelioration of cancer using Ultrasound Activated Cancer Therapy (USAT) and Photodynamic Therapy (PDT). Cancer therapies approved by the FDA today when successful is due to their ability to kill cells (apoptosis). Unfortunately, these therapies lack specificity thus kill healthy tissue rendering patients profoundly ill. USAT—also known as Sonodynamic Therapy (SDT)—involves the synergy between a non-toxic tunable "sensitizer" and an energy source, in this case ultrasound. New and novel USAT sensitizers have great specificity for hyper-proliferating tissue such as cancer cells. When activated, the sensitizers cause destruction to cancer cells only and do not impact healthy tissue. Further, the mechanism of tumor cell destruction is necrosis instead of apoptosis. PDT is cancer therapy using light, generally red light, to enhance the cytotoxic effects of "photo sensitizers."

In this presentation, Ultrasound Activated Cancer Therapy and Photodynamic Therapy is described. Specifically, we discuss the history of "activated" therapeutics and the advantages of combination therapies, USAT and PDT, compared to conventional cancer treatments. We examine the extremely low toxicity of the sensitizers as determined in Zebra fish, mice and in clinical environments. The efficacy of USAT and PDT treatment protocol is demonstrated through results from mice models. Additionally, case studies submitted by cancer clinics where USAT and PDT are used in a compassionate care mode are reviewed.

853
ORAL COMPLICATIONS IN DAILY PRACTICE DURING RADIOTHERAPY TREATMENT

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In many cases, radiotherapy is the mainstay treatment in head and neck tumors. Usually, 30–35 daily fractions are necessary in radical radiation treatment. At the same time, it is very important for **the treatment not to be discontinued**. New radiotherapy techniques (3DCRT, IMRT, IGRT) manage to control and cure the head and neck malignancies and at the same time they manage to protect normal tissues. But oral complications are inevitable. Periodontal disease, carries and teeth extractions should be done before radiation treatment. The adequate nutrition is the goal of supportive care during radiotherapy.

Usually, after 30–40 Gy mucositis/stomatitis is present. Xerostomia (dry mouth) occurs when doses >20 Gy are delivered to salivary glands and permanent damage may be seen above doses of 40 Gy. Pain, ulcers, difficulty in swallowing and oral infections because of imbalance in normal oral flora provoke weight loss, bad quality of life and finally discontinuation of radiotherapy treatment.

The management of oral complications and prophylactic daily oral-hygiene program is the cornestone in the effectiveness of radiotherapy treatment.

854
UPDATED CLINICAL PRACTICE GUIDELINES FOR MUCOSITIS

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The MASCC/ISOO clinical practice guidelines for the prevention and treatment of mucositis are an important resource for clinicians worldwide in managing this debilitating toxicity of cancer therapy. The Mucositis Study Group of MASCC/ISOO has been working for many months on the process of updating these guidelines. The methods followed will be described in detail in the previous talk by Drs. Bowen and Elad. A Guidelines Update Meeting is planned to be held in Athens on 21 June 2011. At this meeting, the outcomes of the literature reviews will be presented and the updated clinical practice guidelines will be developed. These updated guidelines will be presented during this talk by Dr. Lalla.

855
CURRENT APPROACH TO MANAGEMENT OF DERMATOLOGIC TOXICITIES (DTS) IN CANCER PATIENTS TOPIC: THERAPEUTICS

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Objectives: Dermatologic toxicities (dTs) associated with anticancer treatments include papulopustular rash (PPR), hand-foot-skin reaction (HFSR), xerosis and pruritus. These dTs negatively impact quality of life (QoL) and may affect outcomes. This report addresses first-line management of dTs in the cancer setting.
Methods: A systematic literature search (PubMed, Embase, Cochrane Library) was conducted for therapeutic agents and their indications for dTs in oncology patients. Management strategies are addressed for oncology-related dTs, both pre-emergent and post rash.
Results: First-line management of dTs include various topical moisturizers, keratolytics, anesthetics, antibacterials, antivirals, antifungals, corticosteroids, antipruritics and retinoids: keratolytics may manage ≥ grade 1 HFSR as well as thickened, scaly plaques, lidocaine for HFSR and perianal dermatitis, antibacterials for ≥ grade 1 PPR and folliculitis, corticosteroids for grades 2–3 HFSR. Both topical and systemic retinoids have been used for recalcitrant PPR. Retinoids, topical and oral antibiotics and emollients are all reported to be of use in the management of PPR, whereas systemic corticosteroids have shown an inverse relationship. Of note, pre-emergent therapy for EGFR therapy produces lower toxicity grade and more rapid recovery.
Conclusions: Failure to treat dTs in the cancer setting leads to anticancer therapy dose-reduction or cessation, directly affecting outcomes. Pre-emergent management with oral antibiotics and/or topical corticosteroids decreases the severity of dTs associated with EGRFIs, and may likely decrease anxiety, improve treatment adherence and improve QoL. Consequently, it is crucial for oncologists to be aware of approaches to dT management.

856
SERUM CYTOKINES MAY OUTWEIGH CLINICAL FACTORS IN PREDICTING WEIGHT LOSS IN ADVANCED PANCREATIC CANCER (PC)

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Background: The identification of PC patients at high risk for cachexia may allow for early intervention in preventing this outcome. We evaluated the ability of presenting symptoms and cytokines to predict cachexia.
Methods: We evaluated 44 newly diagnosed advanced or metastatic PC patients for baseline symptomatology (e.g. nausea, fatigue, pain) via the M.D. Anderson Symptom Inventory (MDASI). Baseline levels of inflammatory cytokines (e.g. CXCL-16, CRP, IL-6, IL-8) were assessed. Logistic regression analysis was performed to determine the odds ratio (OR) and confidence interval (CI) for the association of different parameters with 10% weight loss. Student t-test was used to compare the mean values across different strata.
Results: A weight loss of >10% or death within 60 days from treatment initiation was observed in 15 patients (34%). Only the use of mild opioids was associated with weight loss; estimated OR (95% CI)=6.2 (1.2–31.9), P=0.03. No association was observed for the other MDASI parameters. Baseline level of cytokines was available for 23 patients. We observed significant difference in the mean values of CXCL-16 (p=.05) and IL-6 (p=.045) in patients with weight loss as compared to those without weight loss.

Moreover, serum level of erythropoietin was negatively associated with weight loss, P=0.06.

Conclusions: Alterations in serum cytokine levels might correlate more strongly with cachexia than clinical symptoms. Our findings need to be validated by a larger study. They do argue for the importance of cytokine analysis in identifying PC patients at high risk for cachexia.

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INCREASED PAPULOPUSTULAR RASH VERSUS HAND-FOOT SKIN REACTION IN CANCER PATIENTS RECEIVING CONCURRENT ANTI-DIABETIC MEDICATIONS

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Objectives: Many anti-cancer therapies, especially targeted agents, lead to well-recognized dermatological toxicities (dTs), including papulopustular rash (PPR) and hand-foot skin reaction (HFSR). Risk factors for developing dTs are unclear and little evidence exists for contributing co-morbidities. Diabetes mellitus (DM), due to effects on immunologic function, apoptosis, and skin structure and function, may contribute to the development and severity of dTs. Potential mechanisms include dermatopathophysiologic effects, modulating effects of DM drugs, and drug-drug interactions between DM drugs and targeted agents. Epidermal Growth Factor Receptor (EGFR) and IL-1 synergistically stimulate keratinocyte antimicrobial defenses, suggesting EGFRIs may accentuate DM-associated impairment of the dermal immune response.

Methods: Medical records were reviewed from the SERIES (Skin and Eye Reactions to Inhibitors of EGFR and kinaseS) specialty clinic at Northwestern University from 9/2007-8/2008. Information collected included type of anti-cancer therapy, concurrent medications, and development and severity of dTs.

Results: A total of 325 subjects received anti-cancer agents, both targeted and non-targeted therapies. Of these patients, 20 concurrently received anti-diabetic medications. These subjects had a 50% increased rate of PPR compared to patients not receiving diabetic medication (9/20 vs. 93/305, Number Needed to Harm = 6.9). Notably, subjects on anti-diabetic medications had a 66% decreased rate of HFSR (1/20 vs. 45/305).

Conclusion: These findings suggest that patients concurrently taking anti-cancer and diabetic medications have an increased risk of developing PPR, yet a lower risk of developing HFSR. Diabetes mellitus and/or diabetic drugs represent a potential risk factor for development and severity of skin toxicities in cancer patients.

858
LATE EFFECTS AFTER TREATING CHILDHOOD CANCER

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During the last two decades, childhood cancer has been effectively treated and this success has been attributed to better knowledge of these malignancies, to accurate classification of clinical and histological subgroups, to treatment intensification in certain subgroups and finally to better support our patients. At the present time, 1/570 individuals of age 25–35 is cured of childhood cancer and this number is expected to further increase.It is known that children tolerate acute toxicities better than adults but there are very vulnerable to late toxicities which are subdivided as follows: Growth and development disorders, musculoskeletal and neuropsychological problems, endocrine and immunological dysfunction, cardiovascular and pulmonary problems,GI and renal problems and secondary malignancies.

A) Late effects attributed to *radiotherapy* are documented years after treatment and are related to the following factors:total dose, radiation field, organ(s) included in the field, age of the child on treatment, years elapsed from treatment, type of chemotherapy given.

B) Late effects attributed to *chemotherapy*: nephrotoxicity (ifosfamide, cis platinum), cardiotoxicity (anthracyclines), lung toxicity (bleomycin) etc.

Almost half among survivors are expected to face problems which may interfere with their life's quality. This is why is extremely important to approch, treat and individualize treatment of children according to well planned protocols and survey survivors as follows:

therapy with maximal effectiveness and minimal toxicity, prevention and avoidance of late toxicity, information of parents and later of survivors about the risk of late toxicity, periodic survey for late toxicity, diagnosis and treatment of late toxicity.

862
LYMPHOEDEMA TREATMENT AND PROPHYLAXIS

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It is a fact that the human lymphatic system has been neglected by the medical community all over the world. Lymphedema, one of the most known lymphatic diseases, can be an important problem for the patient as well as for the health system because it is a chronic situation. This chronic condition consists a severe financial, social and psychological burden on the patient and his family.
Lymphedema is an abnormal accumulation of protein rich protein fluid in the interstitium which causes chronic inflammation and reactive fibrosis of the affected tissues. Lymphedema is distinguished into primary and secondary lymphedema. Some of the most frequent etiologies of the secondary lymphedema are cancer and surgery. The diagnosis of lymphedema is supported by the history of the patient (cancer, surgery, radiation, trauma, etc) and the clinical examination (oedema, Stemmers sign, buffalo hump, etc.). There are various imaging tests which confirm the diagnosis of lymphedema such as lymphoscintigraphy, MRI lymphography and ultrasound. The prevention of the onset of lymphedema is of extreme importance. The earlier treatment begins after the onset of lymphedema, the better the prognosis is for the patient. The treatment of lymphedema is mainly conservative. If the conservative treatment fails there is the surgical treatment but without very good results. The best known treatment method is the manual lymph drainage-complete decongestive therapy (MLD/ CDT) and it consists of two phases: a) the intensive phase (which lasts usually four weeks) and b) the conservative phase.

863
HOW AM I GOING TO TAKE ALL THESE MEDICATIONS? CHALLENGES AND CONSEQUENCES OF MEDICATION OVERLOAD

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Patients with cancer are often prescribed with multiple medications to ameliorate symptoms that arise from the malignancy, to treat co-existing medical conditions, and to manage the side effects of cancer treatments. Unfortunately, these patients can also result as victims of the 'medication overload' phenomenon, which can lead to detrimental consequences such as poor medication adherence, occurrence of adverse drug reactions and drug-drug interactions. In this session, the speaker will make practical recommendations on how healthcare providers can improve medication usage among patients with cancer. In addition, the speaker will also address the difficulties that these patients may face in the medication management process and some documented strategies to overcome these difficulties.

864
SEVERE PROGRESSION OF TRISMUS DURING 15 YEARS OF SUFFERING FROM ADENOID CYSTIC CARCINOMA IN THE RETROMOLAR AREA

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Once trismus, a complication of head and neck cancer and its treatment, is established there exist currently no documented specific treatment strategies. Trismus has a detrimental impact on quality of life including a negative effect on nutrion, phonation, swallowing, dental hygiene and treatment and may be a sign of disease progression.
A 42-year-old female presented in February 2008 with severe trismus with a range of motion (ROM) of 3 mm. In 1996, she was diagnosed with adenoid cystic carcinoma of the right retromolar area, treated with surgery and postoperative radiotherapy to 70 Gy.In January 2005, 30 Gy hyperfractionated, was given to the right parapharyngeal space and the basis of the tongue due to recurrens of the tumour. In 2006 new 30 Gy to the nasopharynx and hypopharynx. An ROM of 8 mm was measured. Trismus worsened, she lost weight and reported intense right maxillofacial pain and developed mandibular osteoradionecrosis(ORN). Hyperbaric oxygen therapy, right coronoidectomy, jaw movement exercise(Therabite®) without effect on trismus and ORN. A CT- guided myolysis of the pterygoid muscles increased the ROM from 3 to 7 mm temporary**.** Disease progressed to the cranial base and more radiotherapy was given in 2009 and October 2010. Increasing pain and exhausting vestibular nausea was controlled by dexamethasone, effectively in March 2011. April 2011 the ROM was < 1 mm.
This case report focus on the life-long multidisciplinary challenge in the management of a patient with adenoid cystic carcinoma characterized by slow indolent growth, development of multiple local recurrences, trismus progression, dysarthria and maxillofacial pain.

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LIFESTYLE FACTORS (SMOKING, EXERCISE, AND STRESS): THEIR ROLE IN CANCER RECURRENCE

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Following a cancer diagnosis, many patients seek ways beyond their prescribed treatment to have a positive influence on their prognosis. Patient interest often centers on adopting a healthier lifestyle than the one they followed prior to a cancer diagnosis. This presentation will review the state-of-the science on the role of lifestyle factors in cancer recurrence. The aim is to provide clinicians with practical information they can use to counsel patients on this important topic. The focus will be on examining the impact of smoking, exercise, and stress on the risk of cancer recurrence in individuals with common and treatable early stage solid tumors. Three types of evidence will be reviewed. The first type is epidemiologic research investigating the relationship of each of these lifestyle factors to the risk of recurrence. The second type is laboratory and clinical research investigating possible mechanisms by which each lifestyle factor could influence risk of recurrence. The third type is randomized controlled trial research investigating the effects of interventions designed to modify smoking behavior, exercise activity, and stress levels. The impact of these interventions on the targeted lifestyle factor and on rates of recurrence and other relevant clinical outcomes will be summarized. The presentation will conclude with a consideration of current gaps in knowledge and directions for future research on the role of lifestyle factors in cancer recurrence.

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LONG-TERM ORAL CANCER SURVIVORS: DISFIGURATION, TASTE ABNORMALITIES AND WEIGHT LOSS

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Patients with Head and Neck cancer have an overall 3-year survival of 55% and a disease-specific survival of 61%. Many patients continue to experience life altering sequelae for months to years following treatment. Disfiguration, taste abnormalities and malnutrition are associated with adverse outcomes in long term survivors.

Disfigurement often leads to severe psychosocial problems such as: negative body image; depression; difficulties in one's social, sexual, and professional lives; prejudice; and intolerance. Studies have shown that the response of general population towards patients with disfiguration is with less trust, less respect and often trying to avoid making contact or having to look at their disfigurement.

Dysgeusia and food aversions can develop due to antineoplastic drugs and radiation-induced damage. The consequences are diminished oral intake with resultant weight loss and nutritional compromise. Studies indicate that the impairment of taste function has a dramatic impact on social interactions and quality of life and may persist for up to 7 years after radiotherapy treatment.

Nutritional deficits have a significant impact on mortality, morbidity, and quality of life. There is a significant decrease in survival at 2 years if malnourished (57.5% vs. 7.5%). The etiology of cachexia in patients with head and neck cancer is both primary and secondary. Whilst the therapeutic interventions targeted against secondary causes may be effective many of these patients continue to experience the anorexia cachexia syndrome which leads to progressive depletion of lean body mass and functional capabilities.

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ASTRO 2010/2011

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Recent therapeutic approaches in oncology have lead to substantial improvement of treatment outcomes rendering many cancers a chronic illness. Nevertheless, treatment is often associated with significant early and late toxicities that affect quality of life of patients. Supportive care is becoming an increasingly important area of focus for both investigators and clinicians. The severity of the acute effects of treatment has been recognized; evolution of radiotherapy techniques and testing of new agents to ameliorate or prevent them have shown promising results. The late effects of treatment are now being studied using validated tools and objective measures. Nonetheless, as more patients survive for longer, it has become apparent that late effects of therapy have a profound impact on a patient's physical, functional, and emotional well being. Several abstracts were presented at the 2010 Annual Meeting of the American Society for Therapeutic Radiology and Oncology (ASTRO) that address supportive care issues for patients with head and neck and other cancer sites, undergoing anticancer treatment. Of increased interest is also the highlighted necessity to address psychosocial needs of both patients and caregivers, an area rather underestimated and underinvestigated until now. Patient-focused, high-quality, multidisciplinary care is going to be the main subject of this year's meeting in October. The theme is indicating that this upcoming conference can be one more step towards patient-orientated, evidence based, best supportive care.

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THE PROCESS OF MUCOSITIS GUIDELINES DEVELOPMENT: METHODOLOGY AND PERSPECTIVES

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Background: In 2010 the MASCC/ISOO Mucositis Study Group embarked on the process of updating its guidelines for the management of mucositis.
Methods: All members of the MASCC Mucositis Study Group were invited to participate in the process. Ten topics for review were defined. Literature search strategies were developed by creating lists of known interventions for oral and gastrointestinal mucositis and topic-specific keywords for pathogenesis and epidemiology. Searches were limited to human research published in English. All involved in reviewing underwent training and calibration of completion of review forms to ensure standardised evidence allocation.
Results: During the process of guidelines development several issue were addressed, including, the need for specific approaches for different study types, identifying the optimal criteria for evaluation of scientific evidence, overlap in database searches, inclusion and exclusion criteria for publications, and logistics of electronic and online systems required for completion of this truly world-wide project.
Conclusion: Employing previous MASCC/ISOO methodology provided a valid and practical approach to determination of mucositis guidelines. MEDLINE via the OVID interface provided broad coverage of the published literature and was supplemented by additional database searches as required. Studies published between 1967 and 2010 were included in the review to provide a comprehensive approach to guideline development. Specific software for citation management, structured excel review forms and cloud computing were used as a platform for the first time to organize the vast quantity of publications and data collected. It is hoped that future guideline updates will be streamlined thanks to these new initiatives.

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OBSTACLES TO RESEARCH IN SUPPORTIVE CARE

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Supportive care is understood by some oncology professionals, as well as by institutions and policy makers, as an add-on to treatment, rather than as integral to it. Cancer patients' psychosocial issues are rarely considered worth studying, and psychosocial interventions are not routinely offered in all cancer facilities or to all cancer patients. Barriers to the delivery of optimal supportive cancer care include lack of human and financial resources in many countries and in less privileged local realities within western countries. Older and minority patients have been reported to receive lesser and lower quality supportive care and to be referred for psychosocial research less often than white patients. Cultural and language differences often represent an obstacle to good communication among patients, families and oncology professionals. Even when language barriers can be overcome, oncologists tend to provide inadequate explanations of treatment options to minority patients and do not frequently refer them for clinical trials and for supportive care research and interventions. This results in lower quality of life, less participation in decision-making, suboptimal treatment choices, and increased fear of recurrence and death due to lack of adequate information and support. Obstacles to research on supportive care include the fact that objective, quantifiable data can be difficult to obtain, and qualitative research is still developing. Treatment toxicity, especially when long term, or psychosocial distress require innovative methodologies to be properly assessed. The lack of standardized outcome measures for supportive interventions is also an obstacle to research in supportive care in cancer.

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SUBMITTING MANUSCRIPTS FOR PUBLICATION CONSIDERATION: KEY ISSUES AND LESSONS LEARNED

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Supportive Care in Cancer (SCC) is a multidisciplinary, peer-reviewed journal dedicated to publishing the highest quality original research and reviews concerning the supportive care needs of cancer patients from diagnosis through to end-of-life. SCC receives 600 manuscripts each year for publication consideration, of which about 50% are accepted. These papers cover many important topics, including communication, rehabilitation and survivorship, clinical interventions, behavioural interventions, targeted therapies and novel agents, radiation therapy, palliative care, the science of symptoms, ethics, guidelines and policy, and quality of life.
Papers are submitted online, and evaluated by the Editor-in-Chief (EIC) as to "fit", in terms of the journal's mandate. If appropriate, a subject-matter-specific Associate Editor will manage the manuscript. This step involves identifying a

minimum of two experts to review the paper, assembling and interpreting the reviewers' comments, and communicating a recommendation to the EIC (accept, revise, or reject). Decisions are communicated electronically to authors.

Authors should consider several important issues before submitting a manuscript. First, the manuscript must focus on an issue relevant to the supportive management of patients with cancer. The manuscript should be concise, free of grammatical and spelling errors and fully cite and discuss the existing literature relevant to the subject matter of the submission. A clear description of the methodology (clinical trial, case-control study, survey research, qualitative study), and include hypotheses or research questions. The methods section should also include description of how the sample size was identified, recruitment strategies, and analysis plan. Results must be clearly presented and reflect the analysis plan described in the methods section. The discussion must clearly delineate how the manuscript adds to the existing body of information on a given topic and any study limitations.

The review process is rigorous. Experts are invited to provide fair, independent evaluation of papers. First, a reviewer will ask whether the paper addresses an important question and if it contributes something new to the literature. Next, is the methodology appropriate to the study aim? Is it well described so that it could be reproduced by other investigators? In addition, issues such as the ethics of the study design should be judged and in randomised trials, the CONSORT guidelines articulate what needs to be reported. For example, patients who refuse or drop out of a study should be recorded so that any bias can be determined. Reviewers assess if the results are clear and relate to the purpose and analysis plan of the study. Most importantly, the conclusions should be justified by the results. References should include current, pivotal studies in the area.

The review process is designed to give useful feedback to authors to improve papers. SCC cannot publish every paper it receives, and so only those of the highest quality will be accepted for publication. The guidance from today[1]s session should improve authors[1] understanding of the journal[1]s processes and facilitate chances for success.

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UNCERTAINTY DURING THE TRANSITION FROM CANCER PATIENT TO SURVIVOR

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Introduction: This presentation will address the nature of uncertainty and the implications for cancer survivorsin regards to the dimensions of the physical, functional, emotional, and social domains for quality of life. A discussion of approaches for post-treatment assessment and interventions to ameliorate challenges facing cancer survivors and their familes will be raised.

Background: Cancer is generally recognized as a chronic disease with the number of survivors expected to grow. Advances in early detection of the disease, improvements in treatment, an aging population,availability of supportive care and other factors contributes to increased survival and the potential for better quality of life. However, improvements in survival do come at a cost. Uncertainty about how one will manage their life, being disease free or living with post treatment effects with cancer are common concerns.

It is estimated that about 22 million persons can be identified as cancer survivors world wide. Even where a persons prognosis is favorable, individuals and their familes face considerable uncertainty about the future. A persons quality of life can be compromised following treatment along many dimensions including worry about late effects such as recurrence, the risk of second primaries and concern about pain and fatigue. Survivors also need to cope with barriers in obtaining needed social support, reintegration into family roles and where relevant, return to work. The research addressing quality of life in survivorship is far from comprehensive. While patient concerns and challenges are better understood a predicament remains regarding how to address these important issues. Post treatment assessment to capture potential patient concerns that contribute to uncertainty is rarely done. Interventions that are tailored to improve post treatment recovery are hampered by a lack of understanding of the best timing for these approaches, the absence of resources and a system of care that does not promote good continuity.

Implications: Following this presentation, attendees will be familiar with the characteristics of uncertainty as they apply to post treatment survivorship, approaches for assessment of psychosocial risk for maladaptive behaviour and considerations for interdisciplinary interventions to overcome some of these difficulties.

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WHY DO SOME NEUTROPENIC PATIENTS GET SICK AND OTHERS DO NOT?

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The significance of chemotherapy-induced neutropenia for the outcome of patients with cancer lies on the associated risks of infection and sepsis. The occurrence of serious infections has traditionally been correlated with the depth

and duration of neutropenia. However, there is a considerable variation in the severity of febrile neutropenia (FN) due to individual differences in the susceptibility to infection among neutropenic patients. Although the depth and duration of neutropenia are in large part determined by the underlying malignant disease, bone marrow involvement and intensity of chemotherapy, the predisposition to infection may depend on biological and genetic factors which could provide more reliable and objective parameters for risk assessment in FN episodes. Responsiveness to a single dose of granulocyte colony-stimulating factor (G-CSF) after high-dose chemotherapy has recently been shown to be the only independent factor associated with infection following autologous hematopoietic stem cell transplantation in patients with multiple myeloma or lymphoma. G-CSF responsiveness reflecting the myeloid marrow reserve is a predictor of infection irrespective of the duration of neutropenia, and its prognostic role can further be tested in solid tumor patients before each chemotherapy cycle. Recent studies have also shed light on the genetic predisposition for the development of infection by implicating gene polymorphisms in the innate immune system receptors of pathogen-associated molecular patterns (i.e. the mannose-binding lectin or the toll-like receptors) and in cytokines, which promote opsono-phagocytosis as well as the generation of adaptive immunity against invading microorganisms. In the future, investigation of the role of genetic variations in other candidate genes and genome-wide association studies may allow for the precise assessment of the risk of infection at the start of cancer treatment. This will lead to tailored supportive care for the individual patient in the context of FN, with consequent reduction in hospitalization and morbidity, improvement in quality of life and containment of health care costs.

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XEROSTOMIA IN CANCER

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Background: Saliva plays a major role in protection of the oral mucosa and teeth by lubrication, antimicrobial properties, acid neutralisation as well as clearance of food and bacteria. Furthermore, saliva facilitates taste perception, mastication, swallowing and speech. Consequently, salivary gland hypofunction (i.e., diminished salivary flow) and xerostomia (i.e., the subjective sensation of a dry mouth) can have a detrimental impact on patients' oral health, nutritional intake and quality of life.

Salivary gland hypofunction and xerostomia induced by cancer therapies are clinically significant adverse effects and occur frequently. Thus, it is well known that external radiotherapy in the head and neck region may cause profound salivary gland dysfunction, and importantly that the impact may be both acute and life-long. Differences in tumor site, stage, and treatment regimens produce different severities of salivary gland dysfunction, which mainly is related to the involvement of the major salivary glands in the radiation treatment portals. However, other cancer treatment regimens may also have adverse effects on salivary gland function, e.g. interstitional radiotherapy, radioactive iodine, cancer chemotherapy, and hematopoietic stem cell transplantation/total body irradiation, although to a less severe extent and for some treatment modalities the impact will be reversible after end of treatment. In addition, xerogenic medication intake and polypharmacy in particular, dehydration and advanced stage of disease may further contribute to salivary gland dysfunction in cancer patients.
Management of salivary gland hypofunction and xerostomia induced by cancer therapies is primarily symptomatic by stimulation of residual secretory capacity of the salivary glands or by the use of lubricating agents if saliva secretion cannot be stimulated. Also, approaches for prevention of salivary gland dysfunction are available or under development e.g. optimization of radiation techniques to limit the radiation dose to the salivary glands and agents to reduce the radiation injury to salivary gland tissue.
Current preventive or treatment strategies include reduction of radiation dose to the salivary glands by intensity-modulated radiation therapy (IMRT) or by surgical transfer of the submandibular gland outside of the radiation portal, the administration of radioprotectors (amifostine), stimulation of residual secretory capacity by pharmacological sialogogues, gustatory and masticatory stimulants, acupuncture or neuroelectrostimulation, and the use of oral mucosal lubricants/saliva substitutes.
Purpose: The lecture will outline salivary gland pathophysiology and the prevalence and severity of salivary gland hypofunction and xerostomia in patients receiving cancer therapies and present evidence-based recommendations of management strategies.

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CONTROVERSIES IN ANTIEMETIC THERAPY

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Advances in antiemetic therapy have been a striking success story for supportive care over the last 30 years. Numerous physiologically relevant neurotransmitter path-

ways, including those based on dopamine, serotonin, and neurokinin receptors, have been identified, and each has led to the development of effective antiemetic agents. Used appropriately, as described in antiemetic guidelines, these agents can markedly improve quality of life for patients undergoing cytotoxic chemotherapy. Such success would certainly seem to be far from controversial. And yet significant controversies and areas for further exploration remain.

Are the sites of action of the major emetic neurotransmitters really understood? Some would say that serotonin has its critical activity at peripheral sites and Substance P at central sites. However receptors for both neurotransmitters are found at both sites, and the evidence that NK-1 antagonists act strictly at central sites is not as strong as first appeared. This question becomes particularly important in evaluating the potential role of NK-1 antagonists in emesis induced by abdominal irradiation or in other forms of chronic nausea/vomiting dependent upon peripheral sites. In evaluating peripheral pathways, the possibility of physical disruption of the gastrointestinal mucosa and the best ways to counteract such injury must also be taken into account.

The validity of alternative remedies and their relationship to classic emetic mechanisms remains controversial. Olanzapine affects numerous neurotransmitter pathways. Is olanzapine redundant to other antiemetics or are their additional pathways to be elucidated from this example? Ginger may have an effect on serotonergic pathways while acupuncture could affect pain pathways and involve Substance P. Other receptors, including cannabinoid, opiate, and steroid receptors, may also be involved with interactions that are not yet clearly understood.

The nature of nausea is a growing area of interest. Although nausea is related to vomiting, it is not the same phenomenon and does not respond equivalently to classic interventions. In fact, nausea may be more closely related to anorexia, and remedies for nausea may be found in investigations of remedies for cancer cachexia. Such investigations may also alter the relationship between the MASCC Study Groups, since the Antiemetic Study Group, the Nutrition Study Group, and the Mucositis Study Group may have valuable information to share concerning potential mechanisms of action—all of which will inform our studies of Quality of Life.

Personalized medicine will also enter the field of antiemetic care. We already know that mutations of serotonin receptors may affect emetic susceptibility on an individual level. However the approved maximally effective doses of several antiemetics differ between countries and regions. Is this the result simply of regulatory authority actions, do these results reflect the limitations of smaller clinical trials, or are these results the product of differing frequencies of key genotypes and phenotypes in different nationalities and ethnic groups that could indeed alter population pharmacokinetics and pharmacodynamics?

These questions will continue to make antiemetic research an exciting and fruitful area.

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HEALING OF DENTAL EXTRACTION SITE IN IRRADIATED PATIENTS

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The vast majority of patients with head and neck cancer are receiving radiation therapy with the jaws being involved, in many cases, in the radiation field. The exposure of the jaws to radiotherapy results in hypocellular, hypovascular and hypoxic bone. Incidental or iatrogenic exposure of the jaw bone to the oral cavity will might result with osteoradionecrosis (ORN), a debilitating complication with great influence on quality of life. Dental extraction is considered to be a major risk factor for the development of ORN. The ability of the irradiate bone and soft tissue to repair themselves after such a procedure is impaired due to the direct and indirect consequences of the radiation. The value of preventive measures such as preoperative and postoperative hyperbaric oxygen or antibiotics is questionable. The purpose of this lecture is to review the current knowledge on the development of ORN following dental extraction and the available evidences for the use of such preventive measures.

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NAUSEA AND VOMITING IN ADVANCED CANCER: APPROACHES TO MANAGEMENT

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Nausea and vomiting are relatively common in advanced cancer and is dreaded more than pain by patients.History, pattern of nausea and vomiting, associated symptoms and physical examination provides clues as to etiology and may guide therapy.Continuous severe nausea unrelieved by vomiting is usually caused by medications or metabolic abnormalities while nausea relieved by vomiting or induced by eating is usually due to gastroparesis, gastric outlet obstruction or small bowel obstruction.A screening plain x-ray of the abdomen is suggested to assess for constipation or bowel obstruction. A CT scan of abdomen and pelvis may provide further diagnostic information like the presence of peritoneal carcinomatosis, the extent of the intra-

abdominal cancer, location of the bowel obstruction and the potential for palliative surgical intervention.

The initial approach to management should be to treat reversible causes of nausea. Hypercalcemia, common in multiple myeloma and squamous cell cancers, is treated with hydration, bisphosphonates and calcitonin or gallium nitrate. Monthly bisphosphonates may prevent recurrent hypercalcemia. Hyponatremia from inappropriately high ADH hormone responds to fluid restriction and if this fails demeclocycline can be used. Radiation therapy may palliate cranial metastasis and leptomeningeal cancer. If shown to be the offending agent, medications, like digoxin or iron supplementation, can be discontinued. Opioids can be changed, which may lead to resolution of nausea. Abdominal paracentesis may relieve nausea associated with ascites. Bowel regimens that include enemas and/or suppositories can resolve fecal impaction

The etiologic guidelines involves an approach to the management of nausea and vomiting based on the clinical assessment of the cause Drug choices are empiric or based on etiology.An empiric approach involves using single antiemetics regardless of the underlying etiology of nausea and vomiting. Single antiemetics have been evaluated in prospective and retrospective studies. These studies do not necessarily translate into clinical practice.For example, drugs like tropisetron have strong evidence in empiric studies and are not included in etiologic guidelines while antiemetics like haloperidol, commonly used in etiologic guidelines, have little evidence of benefit in single drug studies Metoclopramide has the greatest evidence for efficacy followed by phenothiazines and tropisetron. Corticosteroids have not been effective in randomized trials except in the case of bowel obstruction Treatment of nausea unresponsive to first line medications involves rotation to medications which bind to multiple receptors (broad spectrum antiemetics), the addition of another antiemetic to a narrow spectrum antiemetic (a serotonin receptor antagonist such as tropisetron to a phenothiazine), rotation to a different class of antiemetic (tropisetron for a phenothiazine) or in-class drug rotation. Venting gastrostomy, octreotide and corticosteroids will reduce nausea and vomiting associated with malignant bowel obstruction.

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PHARMACOLOGIC MANAGEMENT OF PAIN: WHAT IS NEW

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Frequently individuals with chronic pain have several pains, one of which responds better to an analgesic. Experimental pain models involve acute skin, nasal, and dental mucosa pain, muscle pain, diffuse noxious inhibitory control (DNIC) and models of hyperalgesia/central sensitization. These models are valuable tools for phenotyping analgesics. Aspirin improves acute pain, is ineffective in ischemic muscle pain but interestingly improves central sensitization. Ibuprofen had the same spectrum of activity including reduction of hyperalgesia. N-methyl-D aspartate (NMDA) receptor antagonists do not reduce acute pain but reduce muscle pain and secondary hyperalgesia. Gabapentin is not effective in acute pain but blocks hyperalgesia. Gabapentin does not enhance DNIC whereas lamotrigine does and morphine diminishes DNIC. Tricyclic antidepressants reduce acute, visceral pain but do not enhance DNIC. Therefore, it is unlikely that there will be a universal analgesic. Trial design for analgesics need to change to stratify by pain phenotype in an enriched enrollment phase 2 design similar to what is transpiring in oncology.

Several recent studies have demonstrated that combinations of analgesics produced superior analgesia compared to single analgesics, though tolerable doses of both drugs were less with the combination. Effective combinations include oxycodone plus pregabalin, morphine plus gabapentin and nortriptyline plus gabapentin. By speculation, gabapentin and pregabalin block calcium channels which may be upregulated by opioids. Gabapentin requires serotonin and SHT3 receptors for analgesia.

Classes of multivalent ligands have been developed; 1) peptide-peptide opioid pharmacophores, 2) peptide-non-peptide opioid pharmacophores, 3) opioid alkaloid double pharmacophores and 4) opioid-non-opioid pharmacophores. The latter is characterized by two commercially available analgesics, tramadol and tapentadol.

Designed multivalent ligands are potentially an approach to improving analgesia with reduced adverse effects, less analgesic tolerance and a reduced risk for addiction.

Combinations of opioid agonists have been tested in animal models. In CD-1 mice methadone and morphine have greater antinociception then the sum of the independent actions of morphine and methadone. Several clinical studies have investigated double opioid therapy. Synergy is likely dose and opioid dependent

At very low doses of morphine is pronociceptive due to activation of Gs proteins. Ultra-low dose naloxone attenuates morphine analgesic tolerance by preventing 1) down-regulation of glutamate transporters,2) phosphorylation NMDA receptors,3) up-regulation of kinases and 4) activation of glia. Low-dose naloxone infusions (0.25 mcg per kilogram per hour) with PCA morphine for postoperative analgesia prevent opioid side effects and reduce opioid requirements. Nalbuphine, an opioid receptor agonist-antagonist, reduces side effects from intrathecal morphine without attenuating analgesia.

Combinations of opioids and NSAIDs are frequently used. A popular choice is to use a cyclooxygenase-2 (Cox-2) inhibitor. Another common approach is to use combinations empirically assuming that any combination of NSAID and opioid are equally effective. In animal models, hydrocodone and ibuprofen have supra-additive analgesia whereas hydrocodone has only additive analgesia with other NSAIDs. Morphine in animal models has supra-additive analgesia with diclofenac, ketoprofen, meloxicam, metamizol, naproxen, nimesulide, paracoxib and piroxicam. Supra-additive analgesia is independent of selective cyclooxygenase inhibition and is a direct action on nociceptive processing within the spinal cord independent of prostaglandin synthesis.

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CARE GIVER: THE INVISIBLE PATIENT OF SUPPORTIVE/PALLIATIVE CARE

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Cancer disease not only affects the individual but also the whole family and thus caregivers. Hence, family therapists refer to the "cancer family" and not to the "cancer personality". Consequently, palliative care is provided not only to patients who have a non-curable disease but also to their caregivers. Family caregivers could be any relative, friend or partner who has a significant relationship and provides assistant to a patient.

With cancer developing into a continuous care problem because of increasing incidence rates, longer survival times, reduction of stays in care settings, and shifting of treatment toward ambulatory care, increased responsibilities have been transferred to caregivers for both the physical and emotional care of their patients with cancer. Caregivers must deal with many unfamiliar situations as cancer patients have needs that include disease and treatment monitoring, medical administration, personal care and emotional support.

Research suggests that most caregivers of cancer patients are experiencing anxiety depression and burden. Depression rates between 12% to 59% and anxiety rates between 30–50%. Other issues associated with caregivers include exhaustion, fatigue, sleeplessness, social isolation and approximately 10–20% of caregivers confronted with complicated grief.

Ongoing open communication between caregivers, cancer patients and health care professionals is essential. It is worth noting that good family interactions can help cancer patients adjust to the diagnosis and treatment.

Healthcare professionals should provide care to caregivers at the time of patient's diagnosis as those who do not receive adequate information and support in the early stages of cancer disease, have greater needs, less trust and confidence in the healthcare team and cope more poorly in advanced stages than caregivers who have been informed and supported throughout the course of the illness. Intervention strategies for the caregivers should include psychoeducational programs, therapeutic counseling and problem-solving intervention which may affect in reducing burden, increasing their self-efficacy and improving quality of life.

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THE ROLE OF BISPHOSPHONATES IN THE TREATMENT OF BONE DISEASE

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Symptom control and quality of life are important to patients, families, health care providers and policy makers. Skeleton is involved in approximately 60%–84% of patients with advanced cancer. Metastatic bone disease contributes to the overall morbidity of these patients by producing pain in 65% to 75% of cases and by causing other complications such as pathological fractures, spinal cord compression and hypercalcemia. These symptoms diminish quality of life of cancer patients(1–3).

Bisphosphonates have assumed an important role in the management of bone disease among cancer patients.

Noteworthy advances have been made in our knowledge of the mechanism of malignant bone destruction.

It is now known that metastatic bone destruction is essentially mediated by osteoclast activation rather than by the direct osteolytic effects of metastatic cancer cells. Bone destruction involves the release of paracrine factors produced by an interaction between the tumor cells, neighboring osteoclasts, the immune system, and other systemic factors. The net result is an increase in osteoclast activity, bone resorption, and the release of various nociceptive chemicals (4, 5). Given the central role of osteolysis in malignant hypercalcemia, bone destruction, and malignant bone pain, it is logical to use inhibitors of osteoclasts to modify the process (5, 6).

Bisphosphonates are well established as the agents of choice in the treatment of tumor-induced hypercalcemia (7). They are also emerging as useful, relatively nontoxic adjuvant modalities in the palliative treatment of malignant skeletal involvement, especially in the setting of diffuse skeletal disease. Various mechanisms may be involved, including direct effects on osteoclasts, the inhibition of osteoclast precursor recruitment, the inhibition of osteoclastic attachment to bone, and decreased osteoclast activity

on bone directly or indirectly following the adsorption of bisphosphonate onto bone. Indirect osteoclastic inhibition via osteoblastic-mediated modifications may also be involved (8–9).

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EONS 2010/2011

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The European Oncology Nursing Society (EONS) has provided professional support to cancer nurses since 1984 and represents the voice of more than 22,000 cancer nurses from 29 European countries. EONS' mission is to promote a healthier future for people affected by cancer, ensuring that they will benefit from the care of well educated, perceptive and proficient cancer nurses. EONS does this through education-, research-, and practice-based initiatives that utilize an evidence base. Such initiatives can only be achieved through effective two-way communication between its Members and a broad range of multi-disciplinary and cross-sectorial organizations involved in cancer care. These collaborations enable its Members to optimize the nursing contribution of cancer patient care across Europe. EONS offers:

· Education projects to develop tailored materials: Skeletal Care Academy, Febrile Neutropenia, Nurses & Doctors in Pediatric oncology partnership..
· Education courses to enhance skills: e-learning (radiotherapy, symptom clusters), target, TITAN, 5 day Masterclass, clinical leadership course, 4 curriculums (post-basic, breast, lung, elderly), accreditation…
· Accreditation Council to recognize quality educational programs
· Research projects to support evidence -based practice and understand patient & nurses' needs: PSA project, Breakthrough Cancer pain, Skin cancer project…
· Grants to encourage professional development such as Clinical travel, Novice research, Major research, Mentoring research, Congress travel, Translation..
· Awards to recognize excellence: Excellence in Patient Education, TITAN Dissemination, Distinguished Merit and Lifetime Achievement.

EONS also publishes in its associated journal: the European Journal of Oncology Nursing (EJON). This is a peer-reviewed journal that publishes scientific articles and serves as a vehicle for the analysis and dissemination of recent developments in the cancer nursing field. The Society also provides its' Members with the EONS Newsletter that is a source of information on clinical topics, project news, updates on educational programs, as well as highlighting topical issues from recent conferences.

EONS recently begun to develop online learning materials enabling those nurses who are unable to attend events and contribute to participate in learning activities. To support nurses in dealing with the side effects of radiotherapy, EONS launched a new online course on this topic in September 2010. This pilot course really hit the target and the large number of applications showed the need for this kind of educational opportunity.

EONS organises a specialist cancer nursing congress (Spring Convention) once every two years. This congress focuses on practical skills building and education in the latest techniques. In the non-Spring congress year, a Nursing Program develops during the European Multidisciplinary Cancer Congress. At the EONS 7th Spring Convention total of 134 abstracts were presented and over than six hundred nurses attended from 35 countries. The program highlighted such diverse topics as impact of EU policy, new developments in targeted therapy, radiotherapy and cancer genetics; updates on breast, lung, prostate and GI cancers; rehabilitation, survivorship, sexuality, emotional distress, ethical issues in cancer care; advance clinical practice, leadership and multi-professional working.

Membership in EONS offers nurses outstanding opportunities to update and expand cancer care knowledge and to exchange information with colleagues across Europe.

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INVASIVE METHODS FOR THE TREATMENT OF CANCER PAIN

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The WHO analgesic ladder serves as the main stay of treatment for the relief of cancer pain. Patients with cancer pain receiving orally opioids and adjuvant drugs may experience adequate pain control in 80%–90% of cases. In the rest 10–20% of the cases some form of invasive therapies will be needed.

Ever since the application in 1980 of morphine for spinal analgesia in patients with refractory cancer pain, spinal infusion therapy has became one of the cornerstones for the management of chronic intractable pain.

The technique of continuous epidural infusion, which maintains a stable therapeutic level of drugs, results in fewer episodes of pain and toxicity. Supplemented by the addition of patient controlled analgesia (PCA), this technique has considerable advantages for cancer patients

In the last three decades the introduction and development of totally implanted drug delivery systems has created new ways to treat cancer pain for refractory patients. Intrathecal drug delivery using implantable pumps is an effective treatment in order to control stable pain. However the appropriate alleviation of breakthrough pain remains challenging. A possible solution is the use of patient controlled analgesia (PCA). The brief review of pain medication delivery, definitely showing that the method is helpful in cancer pain, although the rare complication of mass formation of the catheter tip.

Before the implantation of the delivery system it is important to perform an appropriate trial in order to know if the administration of opioids has side effects or if the patient demonstrate pain relief.

Before considering the use of invasive devices we must fully aware of all the potential complications of the procedure, the device and the drugs used.

As a conclusion we can say that the intraspinal techniques available to treat refractory pain in cancer patients have significantly enhanced our ability to relief suffering.

The advantages are: a)long term of analgesia b)decrease in opioid consumption and c)decrease in adverse events

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DENTAL ASSESSMENT AS IT RELATES TO CLINICAL OUTCOMES IN MULTIPLE MYELOMA PATIENTS

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Osteonecrosis of the jaw was first reported in the literature as an adverse effect of bisphosphonate(BP) therapy in 2003[1]. Bisphosphonate associated osteonecrosis of the jaw (BON) has a higher incidence in patients (pts) receiving intravenous bisphosphonate particularly with zoledronic acid and pamidronate [2]. The purpose of this study was to examine a cohort of patients diagnosed with Multiple Myeloma. Assessment included demographics, preexisting dental disease, level of periodontal disease, MM disease status, medical intervention and mortality. Dental and medical records for 230 MM pts evaluated and treated at our institution from 2000–2008 were reviewed. There were 93 females and 137 males. 63% of patients were Caucasian while 35% were African American. 71.3% received BP; including zoledronic acid and pamidronate or those having received both. Thirty-three pts developed BON (14.3%). Utilizing logistic regression analysis we assessed if selected dental conditions or various combinations of these pathologies such as; periodontal diseases, periapical pathology, prior root canal therapy (RCT) or oral lytic lesions consistent with MM, affect the risk to develop BON. Additionally, dental exam to MM disease status i.e. relapse or death was evaluated. This is the first study to link initial dental assessment with MM outcomes.

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SUPPORTING THE ELDERLY PATIENT

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Elderly (aged 65 or more) cancer patients represent the majority of cancer patients in many countries. In developing countries their number is huge, even if they represent a small proportion of the population of these countries today. As patients get older, the number of comorbidities increase, and determine many aspects of the management of any disease in elderly patients. Management of cancer therapy, be it surgery, radiation therapy or drug therapy along with these other diseases needs more support than in younger patients. The social support network offered to elderly

cancer patients in various countries differs and is of importance in many decisions made. Alopecia is rarely discussed in the context of older patients, yet the self-image can be very important for many such patients, males or females. Anemia is not normal in a healthy elderly person, and its management may be crucial for patients whose cardio-respiratory reserves are decreased by pre-existing diseases. Unexpected neutropenia and febrile neutropenia are not rare among the elderly, and their prevention may be crucial in the elderly who might not tolerate such complications as well as younger patients. This fact is taken into account in existing guidelines for use of granulocyte-colony stimulating factors for the prevention of febrile neutropenia. While elderly persons seem to be less prone to emesis induced by cancer chemotherapy, the prevention of nausea and vomiting is crucial as elderly persons are more at risk of renal and electrolyte complications compared to younger patients. The use of corticosteroids may be a challenge as many elderly patients are diabetic. Fortunately a growing body of evidence indicates that in many cases there could be a more limited use of corticosteroids than the one suggested by guidelines. Bone health is a major issue in non-cancer elderly patients and can be a major problem with some anticancer treatments, in female and male patients. Besides bisphosphonates, the development of denosumab has opened new perspectives for these patients, who should all received calcium, vitamin D and be counseled for weight-bearing exercise. Pain control is of primary importance but has been poorly studied in the elderly, who seem to be more at risk of complications when sedation occurs. Depression is prevalent in the elderly population and is often not diagnosed properly in the cancer patient population. Recent data have highlighted the potential interaction between some antidepressants and tamoxifen. Diarrhea is a most annoying complication of some cancer treatments, and in the elderly person can lead very rapidly to major electrolyte imbalances or renal insufficiency. Furthermore if the patient has difficulties walking, it can become a major handicap. Hypokalemia related to diarrhea can also be riskier in the elderly who have cardiac problems. Mucositis and its complications is also a major issue for some elderly patients, specially when it leads to further undernutrition in an already undernourished elderly person. Elderly persons, even those who seem quite fit, have in general a decreased tolerance to physical stress, and thus deserve even more supportive care than the younger patient.

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ASSESSING AND MANAGING SYMPTOM DISTRESS IN GYNECOLOGIC CANCER PATIENTS

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Is there something specific or unique to cancer related distress of women patients with reproductive cancers?
Although it might seem clear to many of us that these patients are unique, it is hard to say exactly why. Reproductive cancers attack the biological source of women's identity and the source of her ability to reproduce life. While there are differences between the various types of reproductive cancers, all share a common thread and all undermine the patient's identity as a woman.
In ovarian cancer, this 'silent killer' attacks women just at the point when they should be enjoying their success. Moreover, because of its association with a specific ethnicity and the likelihood that it will find its way into the next generation of women, it carries with it familial repercussions and a legacy of fear. The disease itself is associated with unique intestinal symptoms and poor prognosis Cervix cancer patients, often younger than ovarian and vulvar patients, have cancer at 'la bocca de la matrise'. The association of cervix cancer with sexually transmitted disease, premarital sex, or multiple partners can foster an ongoing sense of guilt, shame, and anger in patients. Furthermore, those most at risk for the disease are often those with the lowest level of support and education which leads to a distinctive influence on distress levels.
Endometrial cancer is literally cancer of the womb, the 'maqor'-source of life and the 'maayan'-spring of life and blood in Hebrew, the place of origin of the fetus. Recently it has become clear that the majority of endometrial cancers are related to obesity and its associated co morbidities including mobility issues, diabetes and infertility.
During this discussion, I will discuss symptoms specific to gynecologic cancers, review literature regarding demographic contributors to symptom distress, and briefly introduce different management approaches

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MANAGING SKELETAL RELATED EVENTS RESULTING FROM BONE METASTASES

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In many patients metastatic bone disease is a chronic condition requiring multidisciplinary management to optimise individual patient care. Bone metastases result from the interactions between cancer cells in the bone marrow microenvironment and normal bone cells. Receptor activator of NF-kB ligand (RANKL) is a key mediator in this process. Within the bone microenvironment, factors secreted by tumour cells stimulate stromal cells and osteoblasts to secrete RANKL, which binds to its cognate receptor RANK on the surface of precursor and mature osteoclasts. Release

of RANKL leads to stimulation of osteoclastic bone resorption, and provides the rationale for bone-targeted therapies such as bisphosphonates (BPs) as an adjunct to traditional anticancer agents. Recent studies indicate that the risk of skeletal complications is related to the rate of bone resorption.

Multiple, randomised controlled trials over the past two decades have clearly demonstrated that BPs are effective in reducing skeletal morbidity from metastatic cancer. Zoledronic acid is the most potent BP, and has shown superior efficacy to pamidronate in the prevention of skeletal complications in breast cancer, and is the only agent to show clear benefit in the management of metastatic bone disease from prostate cancer (castrate resistant), lung cancer and other solid tumours. Oral agents such as ibandronate and clodronate provide a useful alternative for some clinical situations.

Denosumab is a fully humanised monoclonal antibody that inhibits RANKL. A dose of 120 mg 4 weekly administered by subcutaneous injection has been defined for the treatment of advanced malignancy. Preclinical data suggest that denosumab is a more complete inhibitor of osteoclast function than the BPs. Additionally, a randomised phase II study in patients with increased bone resorption, despite ongoing BPs, has compared changing to denosumab to continuation of the BP; rapid and sustained biochemical response was seen in >80% of patients switched to denosumab compared with <30% for those continuing on BPs. In a large phase III programme comparing denosumab to zoledronic acid in metastatic bone disease from a range of solid tumours, denosumab was more effective in delaying and preventing skeletal morbidity, easier to administer and had some safety advantages. The bone-targeted agents are an important component of management in advanced malignancy. Combined with systemic cancer therapy, effective symptom control and appropriate surgical and radiological interventions, modern multi-disciplinary care has transformed the care of patients with metastatic bone disease.

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ACUTE AND CHRONIC ORAL COMPLICATIONS

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This session will begin with a welcome to the attendees by Professor Peterson, followed by introduction of conference faculty members. The multidisciplinary health care team approach exemplified in the design of the program will be emphasized.

An overview of acute and chronic oral complications to be discussed during the day will then be presented, to set the stage for the subsequent lectures. The overview will include summary data relative to incidence and severity as well as clinical impact and health economic consequence. Principles of clinical prevention and treatment will be addressed. Key updates from the recently revised United States National Cancer Institute PDQ website directed to oral complications of cancer therapies will be highlighted. Several members of the MASCC/ISOO Oral Care Study Group participated over the past three years in the systematic reviews that have in turn provided the basis for the comprehensive new content in the PDQ document. The full PDQ text for health professionals can be viewed at the following website:

cancer.gov/cancertopics/pdq/supportivecare/oralcomplications/HealthProfessional

The presentation will also address selected novel research directions that are being pursued by investigators at several institutions worldwide.

Professor Peterson will also provide a brief summary of today's session at the conclusion of the conference.