The Case of a 64-Year-Old Male With Metastatic Colorectal Cancer

Jed is a 64-year-old White male of Irish descent who started having frequent episodes of constipation. This symptom prompted Jed to see his primary care doctor, who had been managing his hypertension and hypercholesterolemia.

Jed's medications included atorvastatin 10 mg daily and metoprolol 25 mg BID. Blood work indicated that Jed was mildly anemic. Rectal examination and fecal occult blood test were negative. Jed was advised to schedule a colonoscopy as part of the workup for constipation and mild anemia. Jed scheduled a colonoscopy for the following month. However, one week later, Jed had excruciating abdominal pain and severe constipation, which prompted him to go to the emergency room. He was subsequently admitted for evaluation and treatment.

Computed tomography scan and magnetic resonance imaging of the abdomen and pelvis revealed a mass in the sigmoid colon, diffuse metastatic disease in the right and left lobes of the liver, and retroperitoneal lymphadenopathy. Colonoscopy revealed a completely obstructing 2 cm circumferential mass in the sigmoid colon 20 cm from the anal verge. A biopsy was taken, and an Ultraflex™ Precision Colonic Stent (Boston Scientific) was placed in the colon stricture. Jed was placed on a low-residue diet. The colon biopsy was positive for poorly differentiated adenocarcinoma. A fine-needle aspiration biopsy of the largest liver lesion was positive for metastatic adenocarcinoma.

Jed's past medical and surgical history is unremarkable except for hypercholesterolemia and hypertension, both controlled with medication. His social history is significant for smoking one pack per day for 35 years and occasional intake of alcohol for social occasions. He is married and has four adult children. Family history is significant for a sister diagnosed with colon cancer two years prior at age 50, who is currently alive with no evidence of disease.

Jed is the second sibling to have colon cancer and expressed concern for an increased risk of colon cancer in his children. What advice would you give to him regarding his family's risk?

a. Advise Jed to talk with his adult children, and encourage them to speak with their doctors regarding family history and when they should begin screening for colorectal cancer.
b. Give Jed educational material regarding colorectal cancer and prevention and screening.
c. Assure Jed that his children have no increased risk for developing colorectal cancer.
d. a and b

The correct answer is d. Jed's family is at increased risk for colorectal cancer. The current guideline for colorectal screening for patients who have a first-degree relative with colorectal cancer is to have a screening colonoscopy at age 40 or at the youngest relative's age at diagnosis minus 10 years (Rex et al., 2009).

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Jed had a consultation with a medical oncologist prior to discharge, who explained that he has stage IV colorectal cancer, which is not curable at this time. The goals of therapy are to manage symptoms, prolong survival, and maintain quality of life (see Figure 1).

Figure 1. Goals of Cancer Therapy

- Prevention: Decrease the incidence of cancer
- Cure: The prolonged absence of detectable disease
- Control: An extension of life when cure is unrealistic; preventing the growth of cancer cells without complete elimination of the disease
- Palliation: Comfort when supposed cure or control of the disease is impossible

Note. Based on information from Polovich et al., 2009.

The oncologist recommended that Jed receive systemic chemotherapy utilizing FOLFOX (folinic acid, fluorouracil, oxaliplatin) with bevacizumab. Jed was sent to interventional radiology to have a central venous access port implanted and saw the medical oncologist a week later.

You are the nurse taking care of Jed. You note that he is to receive FOLFOX with bevacizumab. Which of the following statements is *false*?

a. Jed should be monitored for proteinuria and hypertension.
b. Bevacizumab is given as 5 mg/kg every 14 days in the FOLFOX regimen as first-line therapy for metastatic colon cancer.
c. Oxaliplatin is mixed and administered in a 5% dextrose solution.
d. One major dose-limiting toxicity of oxaliplatin is neurotoxicity.
e. Jed should be educated about the possibility of increased cold sensitivity for 3–4 days after receiving oxaliplatin.

The correct answer is b.

Answer a is true. Jed should be monitored for proteinuria and hypertension. Bevacizumab is a monoclonal antibody targeted against vascular endothelial growth factor. The side effect profile for bevacizumab includes proteinuria, hypertension, and congestive heart failure. The patient's urine should be monitored for protein with a dipstick. If the urine is positive for protein, the physician should be notified (Polovich, Whitford, & Olsen, 2009).

Answer b is false. Bevacizumab is given at a dose of 10 mg/kg every 14 days as part of the FOLFOX regimen that Jed is receiving. Bevacizumab is given at a dose of 5 mg/kg every 14 days as part of the IFL (irinotecan, fluorouracil, leucovorin) chemotherapy regimen as first-line treatment for metastatic colon cancer (Polovich et al., 2009; Wilkes & Barton-Burke, 2009).

Answer c is true. Oxaliplatin is given in 5% dextrose. Oxaliplatin is incompatible with chloride-containing solutions such as normal saline. When administering oxaliplatin, be sure to flush the line with 5% dextrose prior to infusing and after infusion is complete (Polovich et al., 2009; Wilkes & Barton-Burke, 2009).

Answer d is true. One major dose-limiting toxicity of oxaliplatin is neurotoxicity. Other toxicities include nausea, vomiting, diarrhea, myelosuppression, and rarely, pulmonary fibrosis (Polovich et al., 2009).

Answer e is true. You would educate Jed about the possibility of increased cold sensitivity for 3–4 days after receiving oxaliplatin. Acute infusion-related side effects and neuropathies often are related to exposure to cold (Polovich et al., 2009; Wilkes & Barton-Burke, 2009).

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Fluorouracil has which of the following side effects or toxicities?

a. Diarrhea, nausea, and vomiting
b. Hand-foot syndrome, photosensitivity
c. Mucositis
d. All of the above

The correct answer is d. The side effect profile for fluorouracil includes diarrhea, nausea, vomiting, and mucositis. Patients should receive education on how to manage diarrhea at home using loperamide beginning with one dose of 4 mg orally, then 2 mg every four hours (Muehlbauer et al., 2009). Based on the emetogenic potential of the chemotherapy regimen, patients should receive a prescription for antiemetics (Friend et al., 2009) and instructions on prophylaxis and management of nausea and vomiting. Patients should be instructed to report any symptoms or side effects that do not resolve or that worsen despite their attempts at self-management.

Mucositis is another potential side effect of fluorouracil, which can be very painful and can affect one's ability to eat and drink. Patients should be instructed on meticulous oral hygiene and use of salt water or sodium bicarbonate oral rinses (Harris, Eilers, Cashavelly, Maxwell, & Harriman, 2009). They should be instructed to call their healthcare provider if mucositis occurs. Fluorouracil also may cause hand-foot syndrome, which is characterized by erythema of the palmar surface of hands and plantar surface of the feet.

Alopecia and photosensitivity also may occur with fluorouracil treatment. Patients should be encouraged to wear long sleeves and a hat with a brim and to apply sunscreen with a sun protection factor of at least 15 when outdoors (Polovich et al., 2009; Wilkes & Barton-Burke, 2009).

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