LOS ANGELES GENERAL MEDICAL CENTER STANDARDIZED PROCEDURE

Subject: Chemotherapy and Non-Chemotherapy Vesicants Extravasation Management by Specially Trained Registered Nurses Standardized Procedure	Original 8/2017 Issue Date:	Standardized Procedure # NA
	Supersedes: 9/2023	Revised Date: 12/23
	Reviewed & Approved by: Interdisciplinary Practice Committee Attending Staff Association Executive Committee	

Policy

Function:
To outline the management of the patient when extravasation or suspected extravasation has been identified.

Extravasation is a potential complication of intravenous (IV) therapy and is defined as leakage of intravenous fluid or medication out of the vein. Serious tissue damage may occur, particularly with vesicants. It is also a risk with other medications, including commonly used medications such as vasopressors and contrast media.

- Signs of extravasation include:
- Lack of blood return
- An infusion that has slowed or stopped
- Erythema and pain at/surrounding the IV site

This standard covers the care of extravasation of Chemo and non-chemotherapy medications. Chemotherapy Certified Nurses and other specially trained RN's will manage extravasation of Chemo and non-chemotherapy agents according to the Chemotherapy and Non-Chemotherapy Vesicants Extravasation Management by Specially Trained Registered Nurses Standardized Procedure . NICU nurses manage extravasation according to the Guidelines for NICU Use of Subcutaneous Hyaluronidase to Treat Infiltration with Skin Injury.

To outline the management of patients receiving Drugs that are considered Vesicants that can cause tissue destruction if there is leakage out of the vein (Extravasation) It is the policy of Los Angeles General Medical Center that the professional nurse will minimize the risk of extravasation. If extravasation occurs, the specially trained nurse will recognize and manage the extravasation according to policy.

The specific function of this protocol may be done anywhere in the Los Angeles General Medical Center where any of the included drugs on this list are given.

Training is done during didactic portion and clinic of the Chemotherapy Certification Course. There is also training done for those not chemo certified that are designated to do the non chemo extravasations Only. This includes others that will be trained to assist with the procedure.
Competency is demonstrated by testing and return demonstration during the clinical component of Chemotherapy Certification Course and the Non-Chemo training. All will have an annual update.

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Circumstances under which RN may perform function:
Only those RN that have documented evidence of the above stated training and competency will be allowed to perform this standardized procedure. Written evidence of training and competency will be maintained by the Nurse Manager and filed in the employee area personnel file. Specially trained Registered Nurses (RNs)and other designated RN's are authorized to initiate this standardized procedure after completion of training and after providing evidence of competency.

Setting:
The extravasation of Chemo and non-chemotherapy medications may be performed throughout the Los Angeles General Medical Center.

GENERAL INFORMATION
Prevention/Assessment
The best treatment is prevention. Assess IV for blood return before administering any fluid/medication continuously. During the infusion, signs of extravasation may include: pain erythema, redness, swelling lack of blood return. or infusion has slowed or stopped. If any of these shown occurred stop your infusion and proceed with part II.

Training and Competency:
Training is done during didactic portion and clinic of the Chemotherapy Certification Course. An individual 2 hour program is done for other non-Chemo certified Nurses that will be responsible for the procedure

Competency is demonstrated by testing and return demonstration during the clinical component of Chemotherapy Certification Course and/or non-chemo training annually.

Only those RN that have documented evidence of the above stated training and competency will be allowed to perform this standardized procedure. Written evidence of training and competency will be maintained by the Nurse Manager and filed in the employee area personnel file.

Supervision:
The Nurse Manager/Designee is responsible for the supervision of the RN staff.

Protocol/Procedure:
General Information
Part 1. Prevention/Assessment
The best treatment is prevention. Assess IV for blood return before administering any fluid/medication continuously. During the infusion, signs of extravasation include, pain erythema, redness, swelling lack of blood return or infusion has slowed or stopped. If any of the following has occurred, stop the infusion immediately, and proceed below.

Part II. Identification of an Extravasation
Upon the identification of an extravasation is identified, the specially trained RN will do the following:

1. Stop IV fluid and medication
2. Ask another RN to contact the provider while continuing to manage the extravasation
3. Apply tourniquet above the site of extravasation
4. Disconnect tubing from the IV catheter. Do not remove the catheter at this time
5. Attach new 5or 6 mL syringe to IV catheter hub
6. Attempt to aspirate residual medication and check for blood return
7. If there is blood return:
   - Slowly aspirate 3-5 mL of blood
   - Administer antidote as indicated (see table below). Give 50% of the total dose of the antidote using a syringe through the IV catheter
   - Remove tourniquet.
   - Remove the catheter as soon as it is no longer needed for antidote administration
   - The other 50% as multiple subcutaneous injections, approximately one-half inch apart to include the entire affected area (a clock pattern of 2, 4, 6, 8, 10, and 12 is suggested
8. If no blood return:
   - Slowly aspirate as much of infiltrated fluid as possible
   - Remove tourniquet
   - Remove IV catheter
9. If antidote is not indicated, move on to elevation and cool / heat instructions in the table below.
10. If antidote indicated, give as multiple subcutaneous injections, approximately one-half inch apart to include the entire affected area (a clock pattern of 2, 4, 6, 8, 10, and 12 is suggested) and randomly in the center of the affected area (As indicated; see table below)
11. Mark the affected area with a pen.
12. Elevate the affected limb
13. Do not apply pressure to the IV site
14. Remove constricting bands that may act as a tourniquet (e.g. armbands, blood pressure cuff, or tape)
15. Cover the affected area with an occlusive sterile dressing.
16. Elevate the affected limb for 24 to 48 hours
17. Assess for the following:
    - Swelling
    - Induration
    - Redness, bruising, or other discoloration
    - Skin translucency
    - Skin cool to touch
    - Pain
    - Itching
    - Circulatory impairment of distal area
    - Drainage
    - Streak formation
    - Palpable venous cord
    - Ulceration
    - Necrosis

Frequency of assessment:

- Inpatients: Every 2 hours for 72 hours
- Ambulatory Care: Schedule follow-up appoint for the following day for assessment of site. Reschedule daily follow-up appointments until there is improvement in the condition of the site.

- For the following extravasated meds: Daily for 3 days, then weekly for 6 weeks;
  - Dactinomycin
  - Daunorubicin
  - Doxorubicin
  - Epirubicin
  - Idarubicin
  - Mitoxantrone

- Notify provider of deterioration in appearance of extravasation site and worsening of signs and symptoms.

Patient Record Keeping:

Document the following in the electronic health record:

- A formative note including:
  - Anatomic location
  - Name of provider notified
  - Treatment administered
  - Generic name and volume of medications which extravasated
  - Patient education/ Follow-up instructions
- Chemotherapy Infusion section in iView
- Safety Intelligence Report
- Obtain photograph of affected area

Circumstances Requiring Immediate Communication with Provider:

Notify provider of any of the following;

- Swelling
- Induration
- Redness, bruising, or other discoloration
- Skin translucency
- Skin cool to touch
- Pain
- Itching
- Circulatory impairment of distal area
- Drainage
- Streak formation
- Palpable venous cord
- Ulceration
- Necrosis

Quality Review:
The Chemotherapy and Non-Chemotherapy Vesicants Extravasation Management by specially trained RN's will be reviewed a minimum of every 3 years.

Non-Chemotherapy Extravasations
All interventions require a provider's order

Medications	**Recommended Antidote+**	**Recommended Compress*** **
Dobutamine Dopamine Epinephrine Isoproterenol Norepinephrine Phenylephrine Vasopressin	Phentolamine 1 mg/mL solution (reconstitute 5 mg vial with 5 mL NS) given as 5 mL subcutaneous injection	Dry, warm
Amiodarone Calcium salts** Magnesium salts** Mannitol** Phenytoin Potassium salts** Sodium salts**	Hyaluronidase 15 unit/mL (dilute 0.1 mL from 150 unit/mL vial with 0.9 mL NS) given as 1 mL subcutaneous injection	Dry, warm
Aminophylline Contrast media** Dextrose** Nafcillin Parenteral nutrition**	Hyaluronidase 15 unit/mL (dilute 0.1 mL from 150 unit/mL vial with 0.9 mL NS) given as 1 mL subcutaneous injection	Cold
Not otherwise listed above	None	Cold

**Only when at hyperosmolar concentrations

Antidotes are recommended to be administered as soon as possible and before application of thermal compresses. Antidotes given as subcutaneous injection should be administered as multiple subcutaneous injections approximately one-half inch apart to include the entire affected area (a clock pattern of 2, 4, 6, 8, 10, and 12 is suggested).

Compresses are recommended to be applied for 60 minutes following the extravasation, then for 20 minutes every 6 hours for 48 hours.

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Chemotherapy Extravasations

Medications	**Recommended Antidote (see step 6)**	**Recommended Compress (see step 7)**
Dactinomycin Daunorubicin Doxorubicin Epirubicin Idarubicin Mitoxantrone	Day 1 & 2: Dexrazoxane 1000 mg/m^2 (max 2000 mg) IV over 2 hours Day 3: 500 mg/m^2 (max 1000 mg) IV over 1 hour DO NOT give antidote extravasation IV catheter site or subcutaneously	Cold
Cabazitaxel Docetaxel Paclitaxel Vinblastine Vincristine Vinorelbine	Hyaluronidase 15 unit/mL (dilute 0.1 mL from 150 unit/mL vial with 0.9 mL NS) given as 1 mL subcutaneous injection	Dry, warm
Bendamustine Cisplatin* Dacarbazine* Mechlorethamine	Sodium thiosulfate 40 mg/mL (dilute 0.8 mL from 250 mg/mL vial with 4.2 mL SWFI) given as 2 mL through cannula and 0.5 mL subcutaneous injection	Cold
Etoposide Oxaliplatin	None	Dry, warm
Not otherwise listed above	None	Cold

*Only when extravasated volume is estimated to be greater than 50% of total volume to be infused
**Only when at hyperosmolar concentrations

Antidotes are to be administered as soon as possible and before application of thermal compresses. Antidotes given as subcutaneous injection are to be administered as multiple subcutaneous injections approximately one-half inch apart to include the entire affected area (a clock pattern of 2, 4, 6, 8, 10, and 12 is suggested).

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The Interdisciplinary Practice Committee reviewed and approved

_____ _____
Date

Chief Physician

_____ _____
Lydia Lam, MD, Co-Chair Date
Interdisciplinary Practice Committee

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Gregory Vermillion, RN, Co-Chair Date
Interdisciplinary Practice Committee

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Nancy Blake, RN Date
Chief Nursing Officer

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,MD, Chair Date
Medical Executive Committee