Extravasation Vesicant: Management

Related Standards & Resources:

1. B-00-13-10138 - Extravasation of Vesicant: Suspected. protocol
2. Preprinted Prescriber's Orders: PHC-PH084 Extravasation of Vesicant Chemotherapy
5. Patient & Family Care Instructions (available for Inpatients and Outpatients - ensure that you have printed off the appropriate instruction set) - obtain from ChartScan
    a. Extravasation - Patient Instructions: azacitidine, bendamustine, bortezomib, CISplatin, dacarbazine, doxorubicin liposomal, gemcitabine, ifosfamide, melphalan – Inpatient: FE.225.C18.PHC or Outpatient: FE.225.C18op.PHC
    b. Extravasation - Patient Instructions: DAUNOrubicin, DOXOrubicin, mitomycin, mitoxantrone – Inpatient: FE.225.C182.PHC or Outpatient: FE.225.C182op.PHC
    c. Extravasation – Patient Instructions: vinBLAStine, vinCRIStine, etoposide – Inpatient: FE.225.C183.PHC or Outpatient: FE225.C183op.PHC
6. Occupational Health and Safety Policies: Code Brown, Cytotoxic Handling
7. Parenteral Drug Therapy Manual: Policies: Cytotoxic Drugs

Skill Level:

Specialized: Registered Nurses who have completed a chemotherapy certification program at the BCCA or at PHC and are currently certified to administer chemotherapy.

Need to Know:

DNA-binding vesicants can cause severe tissue damage. The area of tissue necrosis becomes progressively larger in size and deeper in depth over time.

Non-DNA-binding vesicants are more easily metabolized by local tissue – if there is any tissue necrosis it is local and improves over time.

PRACTICE GUIDELINE

Extravasation kits are available on units where chemotherapy drugs are commonly administered and in the Pharmacy at SPH. Extravasation kits contain:

- 1X 10 mL syringe
- 5X Tuberculin syringe (luer-lock tip)
- 5X 25 g needle (luer-lock tip)
- 4X Alcohol swabs
- Sterile gauze
- Sterile swab sticks
- Dimethyl Sulfoxide (DMSO) 99% solution

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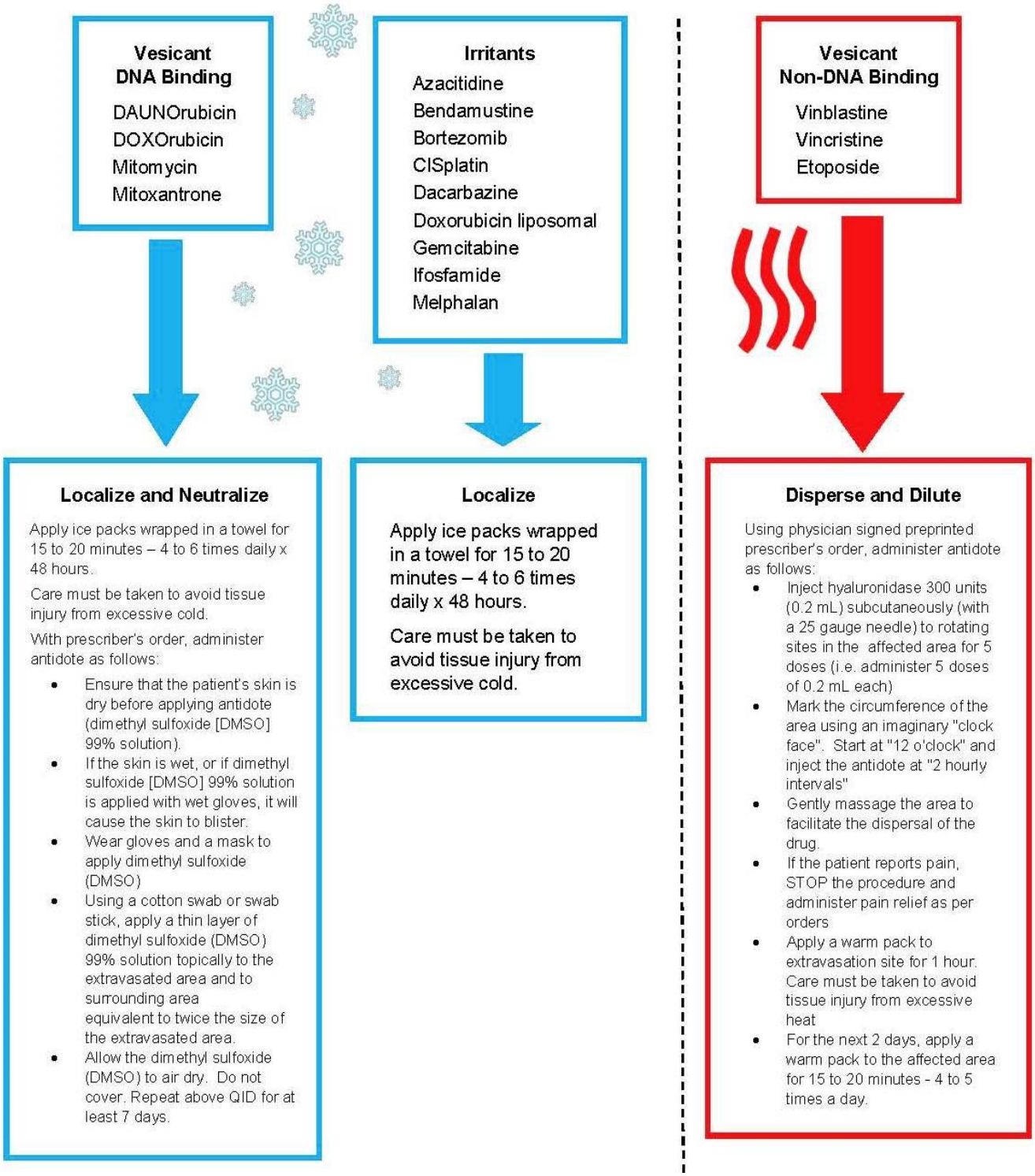
- Hyaluronidase 1500 units /mL injection ampoule



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The following drugs are considered non-vesicant drugs, or neutrals. No treatment is indicated should any of the following drugs extravasate during administration.

A - For ALL suspected extravasations (regardless of drug):

1. Immediately stop administering the drug and IV fluids. **Clamp IV tubing and extension set**.
2. Disconnect the IV tubing from the IV catheter hub or port needle.
3. Using a 10 mL syringe, aspirate as much of the infiltrated drug as possible.
4. If a subcutaneous bleb is still present, aspirate it with a 25 or 27 gauge needle (tuberculin syringe).

5. Remove peripheral IV catheter or IVAD Huber needle.
6. Assess the site of the suspected extravasation.
7. Assess the patient's symptoms.
8. Notify the attending haematologist. If not available, page the on-call haematologist. **Haematologist to determine if an antidote is required *and* provide order for same**. Print off the appropriate preprinted Prescriber's orders for Extravasation Procedure (PHC-PH084).
9. Elevate the affected limb and apply gentle pressure to the site.
10. Note and document the amount of drug remaining in the syringe or infusion bag (this information provides a measurement of the maximum amount of vesicant that has extravasated).
11. Collect the extravasation kit

B - For the following DNA-binding vesicant drugs ONLY:

DAUNOrubicin, DOXOrubicin, mitomycin, and mitoxantrone

Localize and neutralize
Apply cold + DMSO

1. Apply ice packs wrapped in a towel for 15 to 20 minutes – 4 to 6 times daily x 48 hours. Care must be taken to avoid tissue injury from excessive cold.
2. With prescriber's order, administer antidote as follows:
    a. **Ensure that the patient's skin is dry** before applying antidote (dimethyl sulfoxide (DMSO) 99% solution). If the skin is wet, or if dimethyl sulfoxide (DMSO) 99% solution is applied with wet gloves, it will cause the skin to blister.
    b. Wear gloves and a mask to apply dimethyl sulfoxide (DMSO).
    c. Using a cotton swab or swab stick, apply a thin layer of dimethyl sulfoxide (DMSO) 99% solution topically to the extravasated area and to surrounding area equivalent to twice the size of the extravasated area.
    d. Allow the dimethyl sulfoxide (DMSO) to air dry. Do not cover.
3. Repeat above QID for at least 7 days.
4. Document the approximate dose and volume of dimethyl sulfoxide (DMSO) 99% solution used on the patient's MAR.
5. Go to section E.

C - For the following non-DNA-binding drugs ONLY:

VinBLAStine, vincristine, and etoposide

1. Using physician signed preprinted prescriber's order, administer antidote as follows:
   a. Inject hyaluronidase 300 units (0.2 mL) subcutaneously (with a 25 gauge needle) to rotating sites in the affected area for 5 doses (i.e. administer 5 doses of 0.2 mL each). Mark the circumference of the area using an imaginary "clock face". Start at "12 o'clock" and inject the antidote at "2 hourly intervals".
   b. Gently massage the area to facilitate the dispersal of the drug.
   c. If the patient reports pain, STOP the procedure and administer pain relief as per orders.
   d. Apply a warm pack to extravasation site for 1 hour. Care must be taken to avoid tissue injury from excessive heat. For the next 2 days, apply a warm pack to the affected area for 15 to 20 minutes - 4 to 5 times a day.

2. Go to section E

D - For the following irritant drugs ONLY:

Azacitidine, bendamustine, bortezomib, CISplatin, dacarbazine, doxorubicin liposomal, gemcitabine, ifosfamide, and melphalan

1. Apply ice packs wrapped in a towel for 15 to 20 minutes – 4 to 6 times daily x 48 hours. Care must be taken to avoid tissue injury from excessive cold.
2. Go to section E

E - For ALL drugs identified in this procedure:

1. Administer pain relief medications if required.
2. Enter SCM order for routine PIV start in opposite limb (or if in MSSU – restart IV as per unit protocol)
3. Complete chemotherapy.
4. Initiate "Extravasation Flow-Sheet – Initial Assessment".

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5. Complete “Extravasation - Patient Instructions for the drug that extravasated - please note that there are 2 versions: inpatient and outpatient – please print off the appropriate form. Review with, and give, to the patient and/or family
6. Complete a safety event report in PSLS
7. If required, consider referral to:
    - For inpatients – Wound Care nursing
    - For outpatients – TST for home care nursing wound management

Patient Education and Resources:

Patients and/or family should be provided with "Extravasation - Patient Instructions (Inpatient or Outpatient)”. Review the following with the patient and family:

- explain what an extravasation is
- explain what they might expect over the coming weeks
- review the care that is required at home
- ensure that the patient and/or family (if the patient is an outpatient) has contact information should problems arise while at home
- consider a referral to TST for skin & wound care if appropriate

Following an extravasation, the patient should have the affected skin assessed (can be done over the phone if the patient/family is able) at the following intervals: Q2 Days x 3, then weekly for 6 weeks. Ensure that you have the patient's contact information.

Documentation:

Nursing documentation for a suspected extravasation should be completed on the following 2 documents:

1. Extravasation Flow-Sheet - Initial Evaluation
2. Extravasation Flow-Sheet - Ongoing Evaluation

Additional documentation related to the extravasation can be captured via the Progress Record and other nursing documentation tools.

Ongoing wound care related to the extravasated site should be documented on the respective wound care flow-sheets.

References:

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Persons/Groups Consulted:

Nurse Educator IV Therapy

Pharmacist - TPN & Chemotherapy Pharmacist

Nurse Educator Medicine

CNL MSSU

Author(s):

RN MSN - Chemotherapy CNS

Approved/Reviewed/Revised:

October 2012

Revised: September 2014

Revised: May 2018

Appendices:

Appendix A - Extravasation Flow-sheet Initial Evaluation

Appendix B - Extravasation Flow-sheet Ongoing Assessment

Appendix C - Patient & Family Extravasation Instructions (inpatient & outpatient)

Appendix A Extravasation Flow Sheet – Initial Evaluation

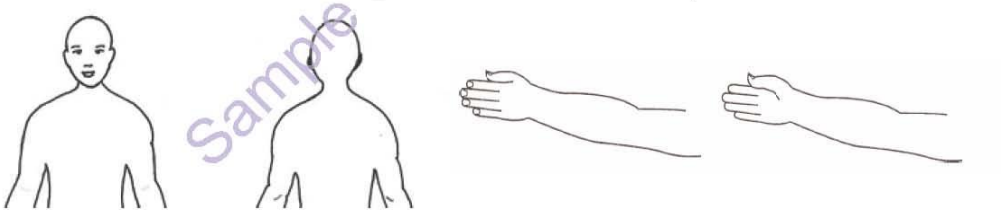
EXTRAVASATION FLOWSHEET
INITIAL EVALUATION

This form to be completed ***at the time of the extravasation event***. All subsequent assessments and interventions must be documented on the "Extravasation Flowsheet - Ongoing Assessment".

Extravasation Event		IV Access at Time of Extravasation Event	
Date of suspected extravasation		☐ Peripheral IV	☐ CVC
Time of suspected extravasation		Type and gauge of IV	
Extravasated drug		Location of IV	
Concentration of extravasated drug		Number of venipuncture attempts (for peripheral administration) :	
Estimated volume of extravasated drug		Vesicant administration technique ☐ Bolus ☐ Infusion	
Symptoms reported by the patient:		Description and quality of blood return before and during administration:	
Description of site & extremity:			

On the diagrams below, please indicate the following:
○ = Insertion site
X = Insertion attempts

Area of swelling and redness
Outline the area of swelling and redness on the diagram below and include measurements of width x height in centimeters.



Initial Interventions	Additional Interventions
☐ Physician notified:	☐ Patient/family education:
☐ Antidote given:	
	☐ Wound Care consult
☐ Cold compresses:	☐ Plastics consult
☐ Warm compresses:	☐ Follow-up:
☐ Other:	

Date: _____ Time: _____

Signature: _____ Printed name: _____

Form No. NF369 (Oct 17-12) Page 1 of 1

Appendix B Extravasation Flow Sheet- Ongoing Evaluation

EXTRAVASATION FLOWSHEET
ONGOING EVALUATION

Complete this flowsheet every other day for 1 week then weekly for 6 weeks.
For ongoing wound care, please initiate the Wound Assessment and Documentation Flowsheet PHC-NF099

Date					
Time					
Indicate call or visit					
Pain					
Edema					
Erythema					
Discoloration					
Induration					
Blistering					
Ulceration					
Necrosis					
Size (width x height x depth in cm)					
Fever					
Other (physician follow-up, patient education etc.)					
Initials					

If you initial this form, you must complete the Interdisciplinary Signature Sheet at the front of the Patient chart.

Form No. NF370 (Oct 17-12) Page 1 of 2

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Appendix C Patient Teaching

Found on the Patient Health Education Materials web page (search Extravasation)

Extravasation - Patient Instructions: azacitidine, bendamustine, bortezomib, CISplatin, dacarbazine, doxorubicin liposomal, gemcitabine, ifosfamide, melphalan

Inpatient: FE.225.C18.PHC

Outpatient: FE.225.C18op.PHC

Extravasation - Patient Instructions: DAUNOrubicin, DOXOrubicin, mitomycin, mitoxantrone

Inpatient: FE.225.C182.PHC

Outpatient: FE.225.C182op.PHC

Extravasation – Patient Instructions: vinBLAStine, vinCRIStine, etoposide

Inpatient: FE.225.C183.PHC

Outpatient: FE225.C183op.PHC

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