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Disclosure Information
Speaker: Victoria Beall

I have nothing to disclose.

Objectives
• Describe mechanisms of infiltration and extravasation
• List prevention measures
• Review treatments to minimize extravasation injury
Skin Care Goals

- Prevent iatrogenic injury
- Promote normal skin development

Iatrogenic: An injury induced inadvertently by a physician or surgeon or medical treatment or diagnostic procedure.

Peripheral Intravenous Therapy (PIV)

Problem

- Unreported alterations in skin integrity
- Lacking or absent
  - Standardized care
  - Protocols
  - Clinical guidelines/algorithms
# Problem Solving Process

- **Multidisciplinary Taskforce**
  Knowledge & evidence → action
- **Protocol & Algorithm**
- **Promote EBP & Culture of Safety**
  Nurse, physician & pharmacist inservice

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**Infiltration**

**Infiltration**: inadvertent administration of a non-vesicant into surrounding tissue.

**Non-vesicants**: do not lead to chemical “burning”: can still inflict damage from accumulation/edema

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**Extravasation**

**Extravasation**: the inadvertent escape of a drug from a vein into surrounding healthy tissue.

**Vesicants**: agents capable of causing tissue damage after leakage and may cause progressive tissue damage over time.

**Types of Vesicants**:
- Sympathomimetic: Dobutamine, Dopamine, Epinephrine, Norepinephrine, Phenylephrine
- Hyperosmolar agents: Calcium, Mannitol, Potassium, Sodium bicarbonate, TPN
- Nonphysiologic pH agents: Acyclovir, Diazepam, Ganciclovir, Milrinone, Phenytoin, Vancomycin, Vasopressin, Vancomycin, Acidophilic media/dyes

(This is not a comprehensive list of vesicants)
Mechanism of Infiltration

- Dislodgement
- Vessel erosion
- Vein punctured during insertion
- Hyperosmolar solutions
- Pressure to vein from constriction
- Backflow of IV fluid out the insertion site

Prevention

- PICC/CVL for continuous infusion of vesicants
- Knowledgeable staff
- Accessible resources
  - Protocols, algorithms and order sets
- Appropriate
  - Site selection, insertion, securement and monitoring
- Sensitive pump alarms
- Medications concentrations

Extravasation Injury

Dec 18
Jan 31
Early Detection ~ Rapid Treatment

- Stop infusion/get help
- Elevate the extremity
- Aspirate residual drug through the catheter
- Leave catheter in: remove when deemed appropriate.
- Saline soaks
- Physically remove the offending agent

Non-Pharmacologic Treatment

- Hyaluronidase
- Phentolamine
- 2% Nitroglycerine Ointment
Antidote Administration

Skin & Wound Care

• Assess skin every hour if breakdown occurs:
  – Clean skin/blisters with NS pad or irrigate with 10-20 mL NS
  – Cover wound/demarcation with hydrogel
  – Secure the hydrogel with transparent film – can be left in place for 3 days

• WOCN consult

Documentation

• Date & time
• Location
• Size of infusion device
• Information about a blood return
• Method of administration
• Estimated amount of vesicant infused & concentration
• Symptoms (grade)
• Digital photographs
• Immediate interventions
• Follow-up
• Frequency of skin assessments
• Family teaching
References


