Recognizing Peripheral Intravenous Catheter (PIV) Complications

Purpose: Increase the nursing knowledge regarding identification of complications related to PIV while increasing the safety of PIV care

Definitions:

- **Infiltration:** Non-vesicant infusion instilled into surrounding tissue resulting from improper PIV insertion, dislodged PIV, damage to vein; site
- **Phlebitis:** Irritation / inflammatory reaction within the vein from medication
- **Extravasation:** Vesicant infusion leaking into surrounding tissue resulting in tissue injury and deep tissue damage
- **Vesicant:** drugs that result in tissue death / blistering when accidently infused
- **Aseptic non-touch technique**: integrates use of Standard Precautions with appropriate field management, non-touch technique, and sterilized supplies

High Risk PIV
• Multiple IV attempts (obesity, corticosteroid use, lymphedema)
• IV placed outside of facility (EMS, another hospital)
• Small, fragile veins (infant, children, elderly, hands, bleeding risk, vesicant infusion)
• Sensory or neurologic deficit (paralytic limb, sedated, unconscious)

Reducing the Risk for Complications

Place the smallest catheter size needed, secure site - minimize catheter movement and remove catheter as soon as clinically appropriate. Observe site / surrounding area frequently, use aseptic non-touch technique (ANTT) when palpating / inserting

Infiltration	• Insert needle bevel up (not to puncture opposite vein wall)
Phlebitis	• Discuss irritating solutions when possible (i.e. potassium, vancomycin, hypertonic saline, parenteral nutrition)
Extravasation	• Evaluate / palpate appearance of site often especially with vesicant solutions (consider central venous access or Midline) • With vesicant – use larger vein, allowing more dilution

Guidelines for Care

Identify signs / symptoms, immediately and initiate interventions to minimize tissue damage

Recognize sudden and severe pain that worsens

Observe above insertion site – deep tissue damage may not present with redness / color changes, may be a delay in presentation

Dressing Change every 7 days for transparent dressing, or as soon as possible when compromised

DO NOT flush or apply pressure to extravasation site (can increase amount of vesicant in tissue)

DO NOT apply wet compress to extravasation site (can cause maceration)

REPLACE PIVs inserted emergently, or outside the facility, within 24 hours when clinically possible

Obtain Provider order to discontinue line within 24-hours if no longer medically necessary or not in use

Signs of Infection

Infiltration

- Edema
- Drainage
- Cool/ pale skin
- Site pain
- Sluggish infusion

Phlebitis

- Redness along vein
- Edema/ warmth
- Hard vein
- Lump in vessel

Extravasation

- Blistering
- Sloughing
- Blanching
- Deep tissue damage
- Tissue Necrosis

Review:

- ✓ ALWAYS refer to facility policy / procedure
- ✓ Notify treating clinician and review order(s) or follow standing order set / protocol
- ✓ Check with Pharmacy for additional recommendation with complications due to infiltration, phlebitis or extravasation

Huddle Card: PIV
Applicable Department: Nursing Units
Reference: Vascular Access Device, Insertion, Care and Maintenance Policy
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