

# SUBCUTANEOUS THERAPY

- A. ADMINISTERING SUBCUTANEOUS MEDICATIONS INTERMITTENTLY/CONTINUOUSLY
- B. (SUBCUTANEOUS INFUSION) HYDRODERMOCLYSIS

## PARTS

- I. Purposes
- II. General Information
- III. Responsibilities
- IV. Medications
- V. Patient Preparation
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- I. **PURPOSE:** To outline guidelines in initiating, maintaining, and monitoring the administration of medications and IV fluids continuously and intermittently via the subcutaneous route.
  
- II. **General Information:**
  - a. Hypodermoclysis, the subcutaneous infusion of fluids, is an alternative method of hydration for a specific patient population; i.e., dehydrated or moderately dehydrated patients. This method of medication administration is considered safe and has often been overlooked. It is a method that is easy to establish and has proven to be useful for end of life care.
  
  - b. Patients who may benefit from this type of therapy include those who are nauseated and vomiting, experiencing dysphasia, delirium, confusion, stupor or other changes in mental status, last days or hours of life, seizures, and other conditions that contraindicate oral administration.
  
  - c. Continuous subcutaneous medication administration is contraindicated in patients who do not consent to have the protective catheter needle inserted into subcutaneous tissue as well as for those with severe thrombocytopenia (platelet count < 10,000).
  
- III. **RESPONSIBILITIES:**
  - A. The Physician will:  
Write the orders for the intermittent and continuous subcutaneous infusions of fluids for hydration and medications for pain and symptom management. Orders include dose, route, volume, and rate frequency of administration, mode of administration, and flow rate.

- B. The Pharmacist will:
  - a. Dispense the medication ordered by the physician. Medication shall be dispensed in intravenous (IV) form, but are to be administered subcutaneously.
  
- C. The Nurse Manager will:
  - a. Ensure that staff under his/her supervision is competent in starting, administering, and maintaining subcutaneous fluids and medications.
  
- D. The Registered Nurses will:
  - a. Perform needle insertion for subcutaneous fluids and medications.
  - b. Are responsible for maintaining the rate of delivery as ordered by the physician.
  - c. Assess site every shift for local irritation, pain, poor absorption, sloughing of tissue, infection, and puncture of vessels with bleeding and bruising.
  - d. Changes dressings every 5-7 days as long as site remains intact, or may assign LPN to do so.
  - e. Registered nurses may assign and supervise licensed practical nurses in the administration and monitoring of subcutaneous fluids.
  
- E. The Licensed Practical Nurses will:
  - a. Inspects subcutaneous puncture sites and performs site care as needed.
  - b. Monitor the subcutaneous site and infusion.
  - c. Hang additional solutions for hypodermoclysis given for the purpose of rehydration only.
  - d. LPNs may discontinue the infusion and remove the needle upon Physician's orders.
  - e. CAUTION: LPNs cannot administer opioids via subcutaneous push, PCA or continuous drip.
  
- IV. **MEDICATIONS:** Note medications used for subcutaneous infusion are dispensed in IV form, but are administered subcutaneously. They are concentrated, low volume.

Listed below are preferred drugs for subcutaneous infusion:

**AGITATION/DELIRIUM**

- Chlorpromazine
- Haloperidol
- Lorazepam
- Phenobarbital
- Midazolam\*\* (DO NOT USE ON Safe Harbor)

**ANALGESICS**

- Fentanyl
- Hydromorphone

Ketamine  
Morphine

**ANTICONVULSANTS**

Phenobarbital

**ANTIEMETICS**

Haloperidol  
Metoclopramide  
Ondansetron

**ANTISECRETORY AGENTS**

Glycopyrrolate  
Octreotide

**MISCELLANEOUS AGENTS**

Dexamethasone  
Furosemide  
Ranitidine

6. Some medications are contraindicated for subcutaneous infusion and they are as listed:

- a. Compazine
- b. Thorazine
- c. Valium

**V. Patient Preparation:**

The site of injection may be in the loose tissue of the upper back, anterior and lateral aspects of thighs, outer arms, buttocks, or abdomen.

Infusions should be given slowly with usual maximum of 1000-1500ml over a 24-hour period. Hyaluronidase (Wydase) may be injected into the site via the tubing to promote absorption.

Documentation of subcutaneous fluids and medication is completed according to established standards and policies. Document in BCMA

**Precautions for use due to poor absorption or tissue damage:**

- Do not use subcutaneous infusion on patients with generalized body edema, poor peripheral circulation, or minimal subcutaneous tissue.
- Do not use drugs which are irritating to the tissue.
- PCA medications via the subcutaneous infusion route do not require saline infusions.
- **Do not use the arm for hypodermoclysis infusions.**

## VI Insertion /Intermittent Use:

- 1) The upper back, anterior and lateral aspects of thighs, outer arms, buttocks, or abdomen.
- 2) Rotate sites when changing needles.
- 3) Change sites every 7 days and/or if a local reaction develops.
- 4) Local irritation, itching, site bleeding, or infection can occur. Skin irritation is the most common and can be treated by changing the needle site.

Neon Yellow subcutaneous label

Alaris/PCA/CADD Pump (if indicated)

IV Tubing

V Extension Set

IV start kit

Chlorohexadine Swab

Transparent dressing

24 Disposable gloves gauge 5/8" protective catheter

Normal saline flush

Non Allergic Tape

Skin prep (protective barrier film)

### F. Insertion Procedure:

- 1) Explain the procedure to the patient.
- 2) Consider site selection.
- 3) gather all needed supplies:
- 4) EQUIPMENT/SUPPLIES
  - a. Neon yellow subcutaneous label
  - b. Alaris IV pump/PCA/CADD (as indicated)
  - c. IV tubing
  - d. IV extension set (optional)
  - e. IV start kit or chlorohexadine swab
  - f. Transparent dressing
  - g. 2x2 or 4x4 gauze dressing/sponges
  - h. 24gauge 5/8" protective catheter
  - i. Disposable gloves
  - j. Normal saline flush
  - k. Non allergenic tape
  - l. Skin prep (protective barrier film)
- 5) Wash hands and don gloves.
- 6) Clean selected site with chlorohexadine swab, and if not available, can use alcohol swab, using circular motion and working from center out. Allow to dry.
- 7) Prepare extension tubing and prime with saline.
- 8) Use 24g 5/8" protective catheter.
- 9) Stabilize tissue with free hand, holding it flat, in a natural position.
- 10) Insert needle at an angle of 30-45 degrees with bevel up almost up to hub.

- 11) Check for blood return, there should be no blood return, although you may see an air bubble. (If blood is seen in extension tubing, clamp tubing and remove catheter. Repeat procedure using new 24g catheter and a adjacent site.
- 12) If no blood is seen, secure with tape, use skin prep prior to applying transparent dressing (opside/tegaderm) over the insertion site. Label the site with subcutaneous sticker stating "NOT for IV Infusion"; precede adjustment of fluid/medication rate as prescribed.
- 13) When giving medication as a push, follow with a flush of 1 ml normal saline.
- 14) Examine site at least every 8 hours for redness, pain, fluid leak or swelling.
- 15) Change site as needed.

**VII. Intermittent use and Medication Administration:**

- a. Essential Steps in Procedure:
  1. Complete steps 1-11.
  2. Administer medication(s) as ordered; if more than one, ensure that medications are compatible, flush is not required between medications. (If not, flush with 0.5ml if normal saline after each medication. Can use different subcutaneous site.)
  3. Documentation of medication (s) is completed in BCMA.

**G. Continuous Use:**

- a. Essential Steps in Procedure:
  1. Complete steps 1-14.
  2. Administer IV fluid(s) and or medication(s) as ordered.
  3. Use of IV pump/PCA should be operated as according to manufacturer's instructions.
  4. Observe for proper functioning or complications.
  5. Documentation of subcutaneous fluids and medication is completed in BCMA.

**VIII. Discontinuation:**

- a. Essential Steps in Procedure:
  1. Verify physician's orders for discontinuation.
  2. Wash hands and don disposable gloves.
  3. Turn fluids /pump off.
  4. Remove catheter
  5. Hold a 2x2 gauze over site with pressure for 30 seconds.
  6. Check site, there is no need to dress the site if the skin is intact.
  7. Discard used supplies and wash hands.
  8. Document time subcutaneous catheter is discontinued (include assessment of insertion site).

IX. References:

Jefferson Health System Policies and Procedures. Subcutaneous IV catheter. Insertion and Maintenance.

American Family Physician: Hypodermoclysis: An Alternative Infusion Technique, Menahem Sasson, Issue: 11/01/2004.

Subcutaneous Opioid Infusions. Fast Fact and Concepts#28. National Residency End of Life Curriculum Project. Robert Wood Johnson Foundation, 2000.

<http://www.infectioncontrolday.com/articles/661feat3.html> The 4-1-1 on New Infusion Nursing Standards of Practice.

BVAMC MCM 118-03, December 15, 2006, Administration of Medication and Intravenous Fluids/Medications by Registered Nurses and Licensed Practical Nurses.