56. CONTINUOUS SUBCUTANEOUS INFUSION AND ACCESS DEVICES

Standard

56.1 The clinician assesses the patient for appropriateness of the subcutaneous route in relation to the prescribed medication or solution, the patient's clinical condition, and the presence of adequate subcutaneous tissue.

Practice Criteria

A. Consider administration of isotonic solutions (5% dextrose in water or 0.9% sodium chloride) via a subcutaneous access device (hypodermoclysis) for treatment of mild to moderate dehydration.[1-8] (V)

B. Consider the subcutaneous route for continuous opioid (eg, morphine, hydromorphone, fentanyl) and other infusion therapies/medications (eg, immunoglobulin therapy, terbutaline). In addition, administer other medication on an intermittent basis via a subcutaneous access device.[2,5,9-11] (V)

C. Use hyaluronidase to facilitate the dispersion and absorption of 1,000 mL or more of subcutaneously administered hydration solutions in adults and pediatric patients. The dosage of subcutaneous solutions administered is dependent upon the patient's age, weight, clinical condition, and laboratory values. The rate and volume of subcutaneous fluid administration should not exceed those employed for intravenous infusion.[2,3,5-7,12-20] (V)

D. Consider the use of hyaluronidase to increase the dispersion and absorption of other injected drugs.[19,20] (V)
   1. In patients taking salicylates (eg, aspirin), steroids (eg, cortisone or estrogens), or antihistamines, a larger dose of hyaluronidase for equivalent dispersing effect may be required.[19] (V)
   2. Do not use hyaluronidase to enhance the dispersion and absorption of dopamine and/or alpha-agonist drugs, as the drugs are incompatible. Consult the drug manufacturers' references prior to administering any drug with hyaluronidase.[19] (V)
   3. When hyaluronidase is added to a local anesthetic agent, it hastens the onset of analgesia and tends to reduce the swelling caused by local infiltration, but the wider spread of the local anesthetic solution increases its absorption; this shortens its duration of action and tends to increase the incidence of systemic reaction.[19] (V)
   4. Use with caution in a nursing mother as it is not known if hyaluronidase is excreted in breast milk.[19] (V)
   5. Assess for adverse reactions of hyaluronidase of mild local access site reactions such as redness, pain, anaphylactic-like reactions, and allergic reactions.[19] (V)

E. Select a site for subcutaneous access to include areas with intact skin that are not near a joint and have adequate subcutaneous tissue, such as the upper arm, subclavicular chest wall, abdomen (at least 2 inches away from the umbilicus), upper back, and thighs and/or as recommended by the drug manufacturer. Avoid areas that are scarred, infected, or acutely inflamed.[1,2,5-7,21] (V)

F. Rotate the subcutaneous access site used for medication administration every 7 days and as clinically indicated based on the access site assessment findings.[5,6] (V)

G. Rotate the subcutaneous access site used for hydration solutions every 24 to 48 hours or after 1.5 to 2 liters of solution has infused and as clinically indicated based on the access site assessment findings.[2,7] (V)

1. A stainless steel winged needle is not recommended.[5] (IV)

J. Perform skin antisepsis prior to inserting the subcutaneous access device using 70% isopropyl alcohol, povidone-iodine, or >0.5% chlorhexidine in alcohol solution.[6,23] (V)

K. Aspirate the subcutaneous infusion access device to confirm the absence of a blood return prior to medication and fluid administration.[5,6,10] (V)

L. Apply a transparent semipermeable membrane (TSM) dressing over the subcutaneous access site to allow for continuous observation and assessment. Change the TSM dressing with each subcutaneous site rotation but immediately if the integrity of the dressing is compromised.[2,5,7] (V)

M. The optimal subcutaneous infusion rate is unknown. Medication infusion rates of 3 to 5 mL per hour are reported, and hydration infusion rates of up to 1500 mL over 24 hours are reported. More than 1 subcutaneous infusion site may be used to accomplish a larger infusion volume. Follow the manufacturer's recommended subcutaneous administration rate/infusion method for immunoglobulin infusions.[2,6,7,9] (V)

N. Regulate the infusion of medications administered as a continuous infusion via a subcutaneous access device using an electronic infusion device that has the ability to titrate the rate up or down if required to improve tolerability.[5,21] (V)

O. Infuse isotonic fluids for hydration via a subcutaneous access device using a manual flow regulator.[4,6,7] (V)

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