

PROTOCOL FOR: Intraosseous Infusion of Fluids/Medications

PURPOSE: To provide guidelines for the administration of fluids and/or medications directly into the bone marrow cavity.

DESIRED PATIENT

OUTCOME: Rapid intravascular access in critically ill children or adults is achieved via intraosseous route to allow the administration of fluid, medication or blood transfusions in the ED or pre-hospital.

INDICATION: 1. Following 2 attempts at venous access or inability to achieve reliable access quickly in an emergency situation. Specific situations may include hypovolemia, cardiopulmonary arrest, burns, status epilepticus, status asthmaticus, sepsis, or circulatory collapse. Intraosseous cannulation in a child > 5 years old may be indicated, and is performed by MD.

CONTRAINDICATION: 1. Presence of osteogenesis imperfecta, osteoporosis, ipsilateral fractured extremity.  
2. Avoid introducing needle through area affected by cellulitis or an infected burn.

ACCEPTABLE FLUIDS: A. 5% and 10% dextrose  
PRBC's  
Plasma  
LR  
NS  
Whole blood  
B. Meds- include but not limited to:  
Antibiotics  
Anticonvulsants  
Atropine  
Epinephrine  
Dextrose  
Mannitol  
Sodium Bicarbonate

PATIENT CARE: 1. Restrain extremity as necessary.  
2. Observe for evidence of extravasation.

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3. IV tubing attached to infuse fluids and meds.
4. Conventional vascular access should be established within an hour or two.

- DISCONTINUANCE:
1. Remove needle and apply sterile dressing.
  2. Apply pressure for 5 minutes.

- DOCUMENTATION: Document interventions and patient responses in ED record and include:
1. Insertion site and time started.
  2. Type of needle.
  3. Establishment of conventional access.
  4. Time discontinued and infusion time.

- COMPLICATIONS:
1. Possible complications of this therapy include:
    - a. Subcutaneous extravasation
    - b. Subperiosteal infiltration
    - c. Leakage from puncture site
    - d. Clotting of marrow in needle
    - e. Localized cellulitis increases with length of time the catheter is in place.
    - f. Pain with intramedullary pressure increase resolved with slowing the infusion rate.

CREDENTIALS: MD, Paramedic

APPROVAL: ED Standards Committee  
Nursing Standards Committee

EFFECTIVE DATE: 6/90

REVISION DATE: 9/96, 10/99, 2/06, 9/08