

Subject: Scope of Practice/Procedure – ALS Local Optional Scope
Monitoring Intravenous Heparin Infusions

Associated Policies:

- I. Actions
 - A. Anticoagulant.
 - B. Metabolized in the liver; excreted in urine; half-life of 30-180 minutes.
 - C. IV onset of action immediate; peak 5 minutes; duration 4-6 hours.

- II. Indications
 - A. Prevention and/or treatment of all types of thromboses and emboli, including deep vein thrombosis (DVT), pulmonary emboli (PE), and embolization associated with atrial fibrillation.
 - B. Adjunct in treatment of coronary occlusion with acute myocardial infarction (MI).
 - C. Prevention of re-thrombosis or re-occlusion during MI after thrombolytic therapy.
 - D. Prevention of clotting in surgery of the heart or blood vessels, during blood transfusion, and hemodialysis.
 - E. Treatment of disseminated intravascular coagulation (DIC).
 - F. Maintain patency of peripheral and central IV lines, catheters, and ports.

- III. Contraindications
 - A. Absolute
 - 1. Sensitivity to heparin.
 - 2. Blood dyscrasias or bleeding disorders, e.g., hemophilia, severe thrombocytopenia.
 - 3. Uncontrolled bleeding except DIC.
 - B. Relative
 - 1. Any disease state where risk of hemorrhage may be increased
 - 2. Aneurysm.
 - 3. Severe hypertension.
 - 4. Diverticulitis or ulcerative colitis.
 - 5. Severe hepatic disease or renal disease.
 - 6. Subacute bacterial endocarditis
 - 7. Following major surgery or spinal tap.

- IV. Adverse effects
 - A. Hemorrhage at any site, but may be manifested as easy bruising, petechiae, epistaxis, bleeding gums, hemoptysis, hematuria, melena, vaginal bleeding.
 - B. Fever, chills (due to sensitivity).
 - C. Abdominal cramps, nausea/vomiting, diarrhea (due to sensitivity).
 - D. Rash, urticaria, anaphylaxis (due to sensitivity).

- V. Administration
 - A. Infusions containing heparin may only be monitored by specifically trained EMT-Ps. Patients with IV heparin infusions monitored by EMT-Ps may only be

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Associated Policies:

- transported by ALS providers approved by North Coast EMS.
- B. Heparin may not be started or added to an IV solution. Patient has a pre-existing heparin infusion in a peripheral or central IV line. (Infusion was initiated by physician or medical staff.)
 - C. **EXCEPTION:** If heparin administration is interrupted (IV infiltration, accidental disconnection, etc.), the paramedic may restart the IV line and resume infusion as per transfer orders.
 - D. Patient does not have more than two (2) medicated infusions running, **exclusive** of potassium chloride (KCl).
 - E. Maximum concentration of heparin that can be monitored is 100 units/cc of IV fluid. (Normally pre-mixed at 25,000 units/500cc D5W.)
 - F. Infusion rate not to exceed 2000 units/hour.
 - G. Must use infusion pump for accuracy.
 - H. Patients being transported with a Heparin drip will be maintained on a 12 Lead monitor with reassessment for ECG changes every 10 minutes.
 - I. Reassessment of vital signs every 10 minutes and documented in the PCR.
 - J. Heparin infusion rate will remain constant during transport. Consult base hospital prior to adjusting infusion rate.
 - K. Consult base hospital immediately if patients shows evidence of any of the following conditions:
 - 1. Hemorrhage at any site.
 - 2. Possible cerebral hemorrhage, including:
 - a) Altered level of consciousness.
 - b) Severe headache
 - c) Symptoms of increasing intracranial pressure (ICP).
- VI. Precautions
- A. Use with caution in the following patients:
 - 1. Pregnant
 - 2. Alcoholic (due to decreased hepatic function)
 - 3. Elderly (due to decreased hepatic and renal function and increased injury capability)
 - B. Avoid IM injections or other procedures that might cause bleeding.
 - C. Move patient gently to avoid bruising or bleeding.
- VII. North Coast EMS retrospective evaluation of paramedic interfacility transports of patients on Heparin infusions:
- A. Heparin infusion approved ALS provider agencies must include an evaluation of each Heparin infusion transport in their Quarterly QIP report.
 - B. Heparin infusion approved ALS provider agencies must include an evaluation of each Heparin infusion transport in their Quarterly QIP report.

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Associated Policies:

- C. North Coast EMS will quarterly review Heparin infusion transports for:
1. Number of Heparin infusion transports.
 2. Compliance with documentation/signature/written order requirements.
 3. Compliance with administration protocol.
 - a. Vitals monitored and documented appropriately.
 - b. Patient monitored for adverse effects.
 - c. Changes to dosing and patient response.
 - d. Patient origins and destinations.
 4. Other significant findings, including transfer delays.

Approved:  Date: 2/18/21

Approved as to Form:  Date: 2/18/21