

MWLCEMS SYSTEM
Continuing Education Packet
Heparin

Class:

Anticoagulant

Action:

Heparin inhibits reactions that lead to the clotting of blood and the formation of fibrin clots. Heparin acts at multiple sites in the normal coagulation system. Small amounts of Heparin in combination with antithrombin III (Heparin cofactor) can inhibit thrombosis by inactivating activated Factor X and inhibiting the conversion of prothrombin to thrombin. Once active thrombosis has developed, larger amounts of Heparin can inhibit the thrombus for getting larger by inactivating thrombin and preventing the conversion of fibrinogen to fibrin. Heparin also prevents the formation of a stable fibrin clot by inhibiting the activation of the fibrin stabilizing factor.

Heparin does not have fibrinolytic activity; therefore, it will not lyse (break up) existing clots.

Indications:

Pulmonary emboli, deep-vein thrombosis, myocardial infarction, open heart surgery, disseminated intravascular clotting syndrome (DIC), atrial fibrillation with embolization, as an anticoagulant in transfusion and dialysis procedures, prevention of DVT/PE

Contraindications:

Known hypersensitivity, active bleeding, blood disorders (except DIC), suspected intracranial hemorrhage, severe hypertension, peptic ulcer disease, open wounds, recent surgery, endocarditis, shock, threatened abortion

Side Effects/Adverse Reaction

Spontaneous hemorrhage,
Anaphylactic reactions,
Bronchospasm,
Hyperkalemia in patients with renal failure,
Chest pain,
Thrombocytopenia,
Fever and chills
Hepatitis

Dosage:

Maintenance drip up to 1500 units/hr.

Pharmacokinetics:

IV: peak in 5 min, duration 2 – 6 hours; half-life 1 ½ hours, excreted in the urine, 95% bound to plasma proteins, does not cross placenta or alter breast milk; removed from the system via the lymph and spleen

Incompatible in same line with:

- Amiodarone
- Nesiritide

Special Considerations:

- ⇒ Monitor for signs of hemorrhage, both internal and external
- ⇒ Monitor PTT and platelets
- ⇒ Use cautiously in alcoholism, liver disease, and renal disease and in older adults
- ⇒ Avoid IM, arterial or venous punctures if at all possible
- ⇒ Hold pressure for longer than usual if punctures are necessary
- ⇒ Discontinue Heparin Infusion, divert to the closest hospital and notify medicate control if patient shows signs of hemorrhage
- ⇒ Discontinue Heparin, notify medical control and divert to the closest hospital if patient develops signs of a CVA
- ⇒ Follow ACLS protocols, divert to the closest hospital and notify medical control if a patient develops an arrhythmia
- ⇒ In the event of a cardiac arrest, discontinue heparin, divert to closest hospital and follow the appropriate ACLS protocol.

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Heparin
Post Test

Name: _____

Date: _____

Department: _____

1. Heparin interferes with platelet adhesion and conversion of fibrinogen to fibrin.
 - A. True
 - B. False

2. The half-life of heparin is
 - A. 15 minutes
 - B. 30 minutes
 - C. 1 and ½ hours
 - D. 4 hours

3. The action of heparin is:
 - A. To destroy platelet production in the bone marrow
 - B. To dissolve clots
 - C. To inhibit the clotting process
 - D. To increase platelet production.

4. Heparin is metabolized in the
 - A. Liver
 - B. Spleen
 - C. Kidneys
 - D. Lungs

5. Heparin is ordered in:
 - A. Units
 - B. Mg
 - C. Mcg
 - D. Grams

6. Patients with an increased risk of bleeding during heparin therapy are:
 - A. Alcoholics
 - B. Patients with liver disease
 - C. Patients on oral anticoagulants
 - D. All of the above

7. While transporting a patient on heparin, they begin to bleed very heavily from the nose. You would:
 - A. Discontinue the Heparin infusion, apply direct pressure to the nose, assess the patient including vitals and contact medical control.
 - B. Continue present treatment and divert to the closest hospital
 - C. Contact medical control to see what they advise you to do
 - D. Hold direct pressure and continue transport as usual

8. During transport of a cardiac patient with an acute MI, who is receiving a heparin infusion, he develops sudden cardiac arrest. You would:
 - A. Discontinue the heparin
 - B. Initiate the appropriate ACLS protocol for the rhythm you are seeing
 - C. Notify medical control and divert to the closest hospital
 - D. All of the above

9. During transport your patient experiences a change in neurological status that leads you to form a field impression of a possible acute CVA. You would:
 - A. Continue heparin, notify medical control and divert to the closest hospital
 - B. Provide oxygen, document changes in your report and continue transport to receiving facility
 - C. Discontinue heparin, attempt to stabilize the patient, notify medical control and divert to the closest hospital.
 - D. Discontinue heparin and continue on to receiving facility.

10. During transport your patient goes into V Tach. Vitals remain stable; he is alert and oriented with no complaints of chest pain. He is pink warm and dry. His only complaint is rapid heart rate. You mix up the Amiodarone dose of 150mg in 50ml .9NS. The only line he has running is his heparin drip. Heparin and Amiodarone may be run safely through the same line.
 - A. True
 - B. False