Drug Information Table

Anticoagulants – (factor Xa/thrombin inhibitors) heparin; (factor Xa inhibitor) enoxaparin (Lovenox)

Therapeutic Use	Administration	
• Anticoagulation for evolving cerebrovascular accident, pulmonary embolism, massive deep-venous thrombosis • Adjunct therapy during angioplasty, open-heart surgery, hemodialysis, blood transfusion • Prophylaxis for postoperative venous thrombosis and pulmonary emboli • Acute myocardial infarction (with thrombolytic therapy) • Ischemic complications of unstable angina and some dysrhythmias • Disseminated intravascular coagulation	• Measure baseline vital signs, CBC, platelet count, and hematocrit. • Administer subcutaneously or IV, usually every 12 hr. • Use an infusion pump for continuous IV administration; monitor rate of infusion every 30 to 60 min. • Monitor aPTT every 4 to 6 hr initially, then monitor daily. (Enoxaparin does not require aPTT monitoring.) • Keep aPTT at one and a half to two times the baseline value. • Administer deep subcutaneous injections in the abdomen at least 2 inches from the umbilicus and rotating sites; apply moderate pressure for 1 to 2 min after injection, do not rub. • Make sure patients watch for and report signs of bleeding (bruising, gums bleeding, abdominal pain, nose bleeds, coffee-ground emesis, tarry stools). • Tell them not to take over-the-counter NSAIDs, especially aspirin, or drugs containing salicylates. • Advise them to use an electric razor for shaving and a soft toothbrush.	
Side/Adverse Effects	**Interventions**	**Patient Instructions**
• Hemorrhage	• Monitor vital signs, checking for hypotension and tachycardia. • Monitor activated partial thromboplastin time (aPTT), making sure it is no higher than twice the baseline value. • For heparin overdose, stop heparin and administer protamine, which binds with heparin to form a heparin-protamine complex that has no anticoagulant properties. • Administer IV protamine no faster than 20 mg/min or 50 mg in 10 min.	• Report bruising, petechiae, hematomas, or black tarry stools.
• Thrombocytopenia (low platelet count)	• Monitor platelet count periodically throughout treatment, especially in the first month. • Stop heparin for platelet counts below 100,000/mm^3 and administer a non-heparin anticoagulant, such as lepirudin (Refludan).	• Report calf pain, tenderness, or swelling immediately. • Report shortness of breath.
• Hypersensitivity reactions	• Administer a small test dose first. • Monitor for itching and rash or hives	• Report itching, rash or hives.
• Neurological injury (from hematoma formation during lumbar puncture, epidural anesthesia)	• Monitor spinal insertion site for signs of hematoma formation, such as bruising or swelling. • Monitor sensation and movement of lower extremities.	
Contraindications	**Precautions**	**Interactions**
• Uncontrollable bleeding • Severe thrombocytopenia • During lumbar puncture, regional anesthesia, or surgery that involves the brain, eyes, or spinal cord • Threatened spontaneous abortion	• Hemophilia • Increased capillary permeability • Dissecting aneurysm • Peptic ulcer disease • Severe hypertension • Severe hepatic or renal disease	• NSAIDs (especially aspirin) and antiplatelet drugs increase bleeding risk. • IV nitroglycerin reduces anticoagulation. • Protamine reverses heparin activity. • Herbals ginger, ginkgo biloba, feverfew, and evening primrose oil increase bleeding risk.