

NR567 Final Exam Study Guide

Therapeutic dosing and monitoring of warfarin (Coumadin) & Types of anticoagulants- mechanisms of action and

Blood coagulation mechanisms:

1. injury exposes subendothelial matrix proteins (i.e. collagen and von Willebrand factor) → result in platelet activation, secretion and synthesis of vasoconstrictors and platelet-recruiting and activating molecules [thromboxan acid within platelets; platelets secrete ADP (a platelet aggregator) and serotonin (stimulates aggregation and vasoconstriction)]

2. Coagulation system cascade is activated → resulting in thrombin generation and a fibrin clot, which stabilizes the plug

*1 & 2 occur simultaneously.

Indirect Thrombin Inhibitors	MOA	Dosage	Monitoring	Clinical Applications
Unfractionated heparin (UFH, HMW)	1. Binds to antithrombin and inhibits clotting factor proteases thrombin, IXa, and Xa	Continuous IV infusion bolus: 80-100 units/kg followed by 15-22 units/kg per hour Low dose prophylaxis: 5000 units subq Q8- 12h	Activated partial thromboplastin time (aPTT or PTT), CBC w/ platelet count	
Low-Molecular-Weight Heparin Enoxaparin/Lovenox Dalteparin Tinzaparin	1. Binds to antithrombin and inhibits clotting factor proteases thrombin and Xa	Prophylactic: 30-40mg Q or BID Full dose: 1mg/kg subq Q12h	Unnecessary	
Fondaparinux	1. binds antithrombin, inhibiting factor Xa	Once daily, subq	Unnecessary	