ANTICOAGULANT AND THROMBOLYTIC DRUGS

Oral and parenteral anticoagulants are used to prevent the formation and extension of a thrombus but do not help with an active clot or embolus.

Warfarin is most commonly prescribed. All anticoagulants interfere with the clotting mechanism of the blood; it is the depletion of prothrombin.

Heparin inhibits the formation of fibrin clots, inhibits conversion of fibrinogen to fibrin and inactivated several clotting factors. Heparin can't be taken orally, gastric acids inactive it, given injection only!

Uses
- Prevention of DVT, prevention of post op DVT
- Prevention of A-FIB with embolization, prevention of clotting in arterial heart surgery
- Prevention and treatment of PE, prevention of repeat cerebral thrombosis
- Adjuvant treatment of MI, treatment of coronary occlusion, acute MI, peripheral arterial embolism
- Prevention of thrombus formation after valve replacement, diagnosis of disseminated intravascular coagulation, maintain patency of iv catheter

ADVERSE REACTIONS
- Alopecia, hepatitis, thrombocytopenia

Contraindications
- Active bleeding, hemorrhagic disease, TB, leukemia, uncontrolled hypertension, GI ulcers, recent eye surgery, CNS aneurysm, use during pregnancy can cause fetal death, allergy to pork.

Caution
- Malignancy, heart failure, psychoses, depression

Interactions
- Nsaids/asprin: increased risk for bleeding
- PCN/aminoglycoside: increased risk for bleeding
- Beta blocker/loop Diuretics: increased risk for bleeding
- Disulfiram/citmedine: increased risk for bleeding
- Oral contraceptive/barbiturates/diuretics: decreased effects of anticoagulant

Oral anticoagulant
- Warfarin: coumadin (oral, iv, injection)
- Uses: prevent venous thrombosis
- Adverse reactions: bleeding abdominal cramping (patient teaching)
**Parenteral anticoagulant**

**Heparin:**
**Uses:** thrombosis, embolism diagnosis, tx disseminated intraventricular coagulation, DVT prevention, clot prevention.

**Heparin/sodium lock:**
**Uses:** clearing intermittent infusion to prevent clot

**Parenteral anticoagulants**

**Deltaparin:** fragamin
**Uses:** unstable angina, non q wave MI, DVT prophylaxis
**Adverse reactions:** bleeding, bruising, rash, injection site pain

**Enoxaprin:** Lovanox
**Uses:** DVT, pre op prevention of DVT, unstable angina, non q wave MI
**Adverse reactions:** SAME

**Misc. Anticoagulants**

**Dabigatran:** pradaxa
**Uses:** stroke and embolism prevention
**Adverse reactions:** bleeding

**Fondaparinux:** aritrix
**Uses:** DVT prevention
**Adverse reactions:** bleeding at injection site

**Rivaroxiban :**
**Uses:** DVT/ STROKE prevention
**Adverse reactions:** bleeding
Anti platelets
Decrease the platelets ability to aggregate (stick together) for the life of the platelet.
Adp blockers alter platelet cell membrane
Glycoprotein receptor blockers work to prevent enzyme production
These drugs treat patients at risk for acute coronary syndrome, MI, stroke, intermittent claudication

Adverse reactions
Palpitations, bleeding

Contraindication
Pregnancy and lactation, CHF, active bleeding, thrombotic thrombocytopenia purpura,

Caution
Older adults, pancytopenia, if TTP is diagnosed treatment should be stopped STAT

Interactions
Asprin/nsaids: increased risk of bleeding
Macrolides: increased effectiveness of antiinfective
Digoxin: increased digoxin levels
Phenytoin: increased phenytoin levels

Antiplatelets
Clopidogrel: plavix
Uses: recent MI, stroke, coronary syndrome
Adverse Reactions: chest pain

Dipyridamole:
USES: post op thrombolytic prevention in valve replacement
Adverse reactions: abdominal distress

Prasugrel: effilant
Uses: acute coronary syndrome
Adverse reactions: anemia /bleeding
Thrombolytics
Dissolves blood clots that have already formed in a blood vessel and reopen them once occluded.

Uses
Acute MI or stroke by lysis in the coronary artery, pulmonary emboli, DVT, suspected occlusions in central venous catheters

Adverse reactions
Bleeding is the most common and may be internal (GI/GU) or external

Contraindication
Active bleeding, hx of stroke or aneurysm, intracranial surgery,

Caution
10 days post op, childbirth vaginal and c-section, GI bleeding, trauma within 10 days, diabetic retinopathy, Hypertension

Interactions
When administered with other anticoagulants or asprin there is an increased risk of bleeding

Thrombolytics
Alteplase:
Uses: acute MI, TIA, PE, IV catheter clearance
Adverse reaction: GU bleed, gingival, intracranial bleed, epitaxis, ecchomoyoiosis

Reteplase:
Uses: Acute MI
Adverse reactions: same

Streptokinase:
Uses: acute MI, DVT, embolism
Adverse reactions: minor and major bleeding

Anticoagulant antagonist

Phytonadione
Uses: warfarin OD
Adverse reactions: gastric upset

Protamine:
Uses: heparin OD
Adverse reactions: dyspnea, bradycardia, hypotension

Chapter 38
Cardiotonics
Treat persistant symptoms or recurrent hospitalizations, or as indicated in conjunction with ACE inhibitors, loop diuretics, and beta blockers

**Actions**
Increase cardiac output, they slow conduction velocity through the AVnode and decrease the heart rate.

**Uses**
Heart failure, A-fib

**Adverse reactions**
Visual disturbances blue yellow halo, arrhythmia

**Contraindications**
Digitalis toxicity, ventricular failure, ventricular tachycardia, cardiac tamponade, restrictive cardiomyopathy, AV block

**Caution**
Electrolyte imbalance, thyroid disorders, severe carditis, heart blocks, MI, severe pulmonary function, acute glomerular nephritis,

**Interactions**
When cardiotonics are taken with food absorption is slowed
They reacted with everything

Cardiotonics
Digoxin: lanoxin
Uses: heart failure, A-fib
Adverse reactions: arrhythmia (check blood levels

Inotropic drugs
Milrione:
Uses: short term management of heart failure
Adverse reactions: ventricular arrhythmia, hypotension, angina/chest pain, hypokalemia