

Pharmacology

Pharmacy Department

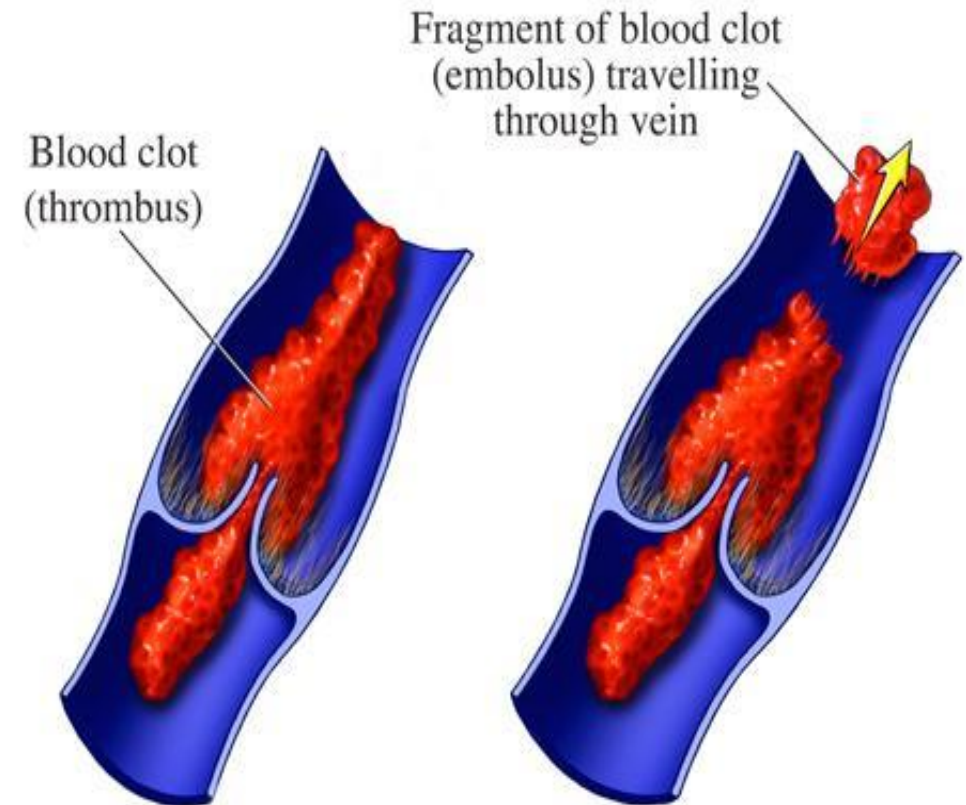
4th Grade

Anticoagulant and Antiplatelet Agents

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OVERVIEW:

- **Thrombosis:** is the **formation of an unwanted clot within a blood vessel**, and it is the most common abnormality of hemostasis.
- **Thrombotic disorders** include acute myocardial infarction (MI), deep vein thrombosis (DVT), pulmonary embolism (PE), and acute ischemic stroke.
- A **clot that adheres to a vessel wall is called a “thrombus,”** whereas an *intravascular clot that floats in the blood is termed an “embolus.”* Thus, a **detached thrombus becomes an embolus.**
- **Both thrombi and emboli are dangerous, because they may occlude blood vessels and deprive tissues of oxygen and nutrients.**



- **Vitamin K**

- ***Vitamin K1 (phytonadione)*** administration can stop bleeding problems due to *warfarin* by increasing the supply of active *vitamin K1*, thereby inhibiting the effect of *warfarin*.
- ***Vitamin K1*** may be administered via the oral, subcutaneous, or intravenous route. For the treatment of bleeding, the subcutaneous route of *vitamin K1* is not preferred, as it is not as effective as oral or IV administration.
- **The response to *vitamin K1* is slow, requiring about 24 hours to reduce INR (time to synthesize new coagulation factors). Thus, if immediate hemostasis is required, fresh frozen plasma should be infused.**

Summary of drugs used to treat bleeding

Medication	Antidote for Bleeding Caused by	Adverse Effects	Monitoring Parameters
<i>Aminocaproic acid</i> <i>Tranexamic acid</i>	Fibrinolytic state	Muscle necrosis Thrombosis CVA Seizure	CBC Muscle enzymes Blood pressure
<i>Protamine sulfate</i>	<i>Heparin</i>	Flushing Nausea/vomiting Dyspnea Bradycardia Hypotension Anaphylaxis	Coagulation monitoring Blood pressure Heart rate
<i>Vitamin K1</i>	<i>Warfarin</i>	Skin reaction Anaphylaxis	PT/INR

CBC=complete blood count, CVA = cerebrovascular accident, PT=prothrombin time, INR=international normalized ratio

Thank
you!