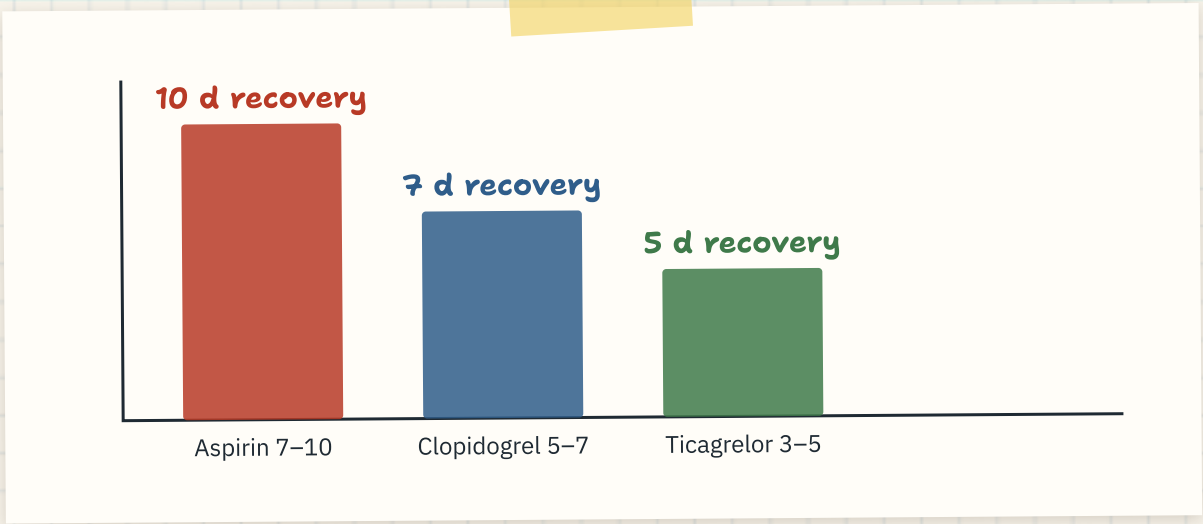
Primary haemostasis: the platelet plug

Adhesion, activation, aggregation, and the drugs



Step by step

1. Adhesion: vWF bridges exposed collagen to platelet GpIb
2. Activation: shape change, ADP and thromboxane A_2 released
3. Aggregation: fibrinogen bridges GpIIb/IIIa
4. Check ristocetin: abnormal = GpIb or vWF

Step	Key players	Drug
Adhesion	vWF + GpIb	None
Activation	ADP, thromboxane A_2	Aspirin, $P2Y_{12}$ blockers
Aggregation	GpIIb/IIIa + fibrinogen	Eptifibatide, tirofiban

Step, key players, drug

Rule of thumb

Drug classes: two on activation, one on aggregation, none on adhesion

No nucleus: an irreversible block lasts the platelet's life

Ristocetin normal, no aggregation: GpIIb/IIIa

Exam traps

- Bernard-Soulier (GpIb): ristocetin abnormal. Glanzmann (GpIIb/IIIa): ristocetin normal.
- Platelet bleeding is mucocutaneous with normal PT and aPTT, not joint bleeding.
- Abciximab acted like tirofiban but is no longer marketed.

Primary haemostasis: platelet adhesion, activation and aggregation

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/haematology-oncology/primary-haemostasis-platelet-adhesion-and-aggregation

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