

Thrombocytopenia

Navin Kumar
Host

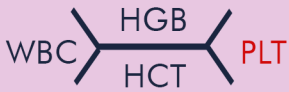
Dr. Robert Stern
Hematologist

Sarah Onorato
Case Presenter

Questions to consider when encountering **thrombocytopenia** (<150,000/microl)

How many cell lines are down?

- Isolated thrombocytopenia
- Bicytopenia
- Pancytopenia



Pseudo-thrombocytopenia?

- Re-run platelet count with heparin vs. citrate (not EDTA)

What is the tempo of the thrombocytopenia?

- What is the patient's baseline platelet count?
- Is this new-onset?
- Is this episodic?

Rule out emergencies

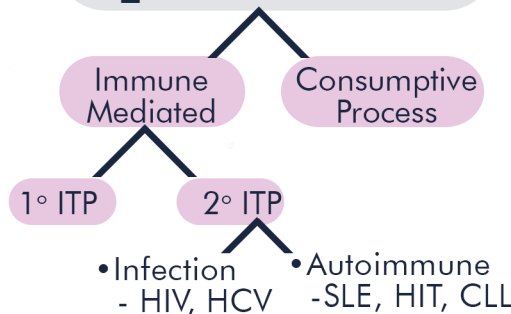
- Severe thrombocytopenia or serious bleeding - transfuse platelets
- Emergency diseases
 - HIT
 - TTP
 - catastrophic APLS
 - DIC
 - HUS

Differential Diagnosis of Thrombocytopenia

↓ PRODUCTION

- Systemic infection
 - Viral
- Nutritional Deficiency
 - B12, Folate (B9)
- Bone marrow malignancy
- Medications / Toxins
- Hereditary
- Liver disease

↑ DESTRUCTION



SEQUESTRATION

- Portal HTN
 - Prehepatic
 - (splenic vein thrombosis)
 - Intrahepatic
 - (cirrhosis)
 - Posthepatic
 - (constrictive pericarditis)

Working up thrombocytopenia

- LABS-**
- CBC
 - BMP
 - Peripheral smear - (clumping vs. schistocytes)
 - LDH
 - Haptoglobin
 - PT/PTT



Clinical manifestations

- Bleeding
 - Neurologic dysfunction
 - Thrombosis
 - Skin necrosis
 - Severe infection
- **Thrombocytopenia can be associated with thrombotic events (in addition to bleeding events) e.g.: HIT, catastrophic APLS**

Medication exposure

- Heparin
- Cephalosporins

Degree of thrombocytopenia can guide bleeding risk

100-150K

Low probability of primary bleeding event. May be secondary to HIT or acute leukemia

60-100K

May be secondary to splenic sequestration

10K-20K

Moderate probability of primary bleeding event. May be secondary to DIC.

<10K

High probability of severe primary bleeding event (brain bleeds)

Heparin-Induced Thrombocytopenia (HIT) Management

Calculate 4T score (pre-test probability of HIT) – see [MdCalc](#)

Thrombocytopenia degree + Timing of PLT fall + Thrombosis or sequelae + Other causes beyond heparin



• Moderate / high probability based on 4T score

- Stop heparin drip
- Start direct thrombin inhibitors: bivalirudin, argatroban
- Send for labs: PF4 Antibodies (sensitive, not specific) is ran first, reflex to:

Serotonin release assay (gold-standard)
• Functional assay • usually a send out lab

• Goal: Avoid thrombotic complications from HIT