

# STEP 1 REVIEW

## HEMATOLOGY

High-Yield Clinical Presentations



MED STUDENT SUCCESS

- Low HB/MCV
- Female with fatigue or elder with blood in stool
- Low Ferritin, low serum Fe, High TIBC

**Iron deficiency anemia**

- Low HB/MCV
- high ferritin, low serum Fe, high TIBC

**Anemia of chronic disease**

- Low HB/MCV
- Basophilic stippling
- Lead or Isoniazid use

**Sideroblastic anemia**

- Low HB/MCV
- Frontal bossing, hepatosplenomegaly
- Target cells

## **B-thalassemia**

- Low HB, High MCV
- Alcoholic, Pregnancy
- High homocysteine, normal methylmalonic acid

## **Folate Deficiency**

- Low HB, High MCV
- Hx of gut resection or AI dz
- Numbness, tingling, fatigue
- High homocysteine and methylmalonic acid

## **B12 Deficiency**

- Low HB, normal MCV
- High LDH, High indirect bili
- Low haptoglobin
- High reticulocyte count

## **Hemolytic Anemia**

- African-American
- Pain in the hands/feet
- Hepatosplenomegaly
- Boat shaped red blood cells

## **Sickle Cell disease**

- RBC membrane defect
- Small RBCs with lack of central pallor
- High MCHC

## **Hereditary Spherocytosis**

- Male eating fava beans or took sulfa drug
- Bite cells
- Heinz bodies

- Hematuria in morning
- Complement mediated
- Lack of CD55/59

- Hemolytic anemia
- Coombs test +
- IgG against RBC Ag
- Hx of CLL or SLE

**G6PD Deficiency**

**Paroxysmal Nocturnal Hemoglobinuria**

**Warm autoimmune hemolytic anemia (IgG)**

- Mycoplasma, infectious Mononucleosis
- Coombs test +
- IgM against RBC Ag

- Low Hb, WBC and platelets
- Non-hemolytic, fatty infiltration of BM
- Low retic, high EPO

- Low HB, normal WBC and platelets
- Non-hemolytic
- Low retic, low EPO

**Cold autoimmune  
hemolytic anemia (IgM)**

**Aplastic Anemia**

**Chronic Kidney Disease**

- Normal platelet count
- Increased BT
- Defect in Gplb, platelet adhesion issue

## **Bernard-Soulier**

- Normal platelet count
- Increased BT
- Defect in GpIIb/IIIa, platelet aggregation issue

## **Glanzmann Thrombasthenia**

- Young female with heavy menses
- Increases PTT and BT
- Abnormal ristocetin assay
- Can treat with desmopressin

## **Von-Willebrand disease**

- Low platelet count
- Increased BT
- GpIIb/IIIa antibodies form

**ITP**

- Deficiency of ADAMTS13
- Low platelets
- Increased BUN and cr
- Fever, confusion
- Schistocytes on PBS

**TTP**

- Kid gets bloody diarrhea after eating a burger
- Low platelets
- Increased BUN and cr
- Schistocytes on PBS

**HUS**



- Boy with knee swelling or bleeding after mild trauma
- Increased PTT
- Corrects after giving factor VIII

## **Hemophilia A**

- Boy with swollen knee
- Increased PTT
- Corrects after giving factor XI

## **Hemophilia B**

- Severe bacterial infection
- Bleeding from IV lines
- High PT, PTT, BT
- Low fibrinogen

## **DIC**

- Patient with nephrotic syndrome gets a stroke

- Skin necrosis after warfarin use

- Young female gets stroke or PE
- Hx of recurrent pregnancy losses

**Antithrombin Deficiency**

**Protein C or S deficiency**

**Antiphospholipid  
Antibody syndrome**

- Abdominal pain
- Psych issues
- PBG deaminase defect
- Treat with hemin

## **Acute Intermittent Porphyria**

- Hep C pt
- Blisters on back of the hand
- Skin rash worse in sun
- Uroporphyrinogen decarboxylase defect
- Treat with phlebotomy

## **Porphyria cutanea tarda**

# THANK YOU!

## Questions?

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More STEP Resources: [medstudentsuccess.com](http://medstudentsuccess.com)



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