S**eptember 19, 2023, AHD Learning Objectives**

**Iron Metabolism**

1. Describe several causes of iron malabsorption. (Note that this is a less common reason for iron deficiency than blood loss, but it should be included in your differential of iron deficiency states.)
2. Distinguish between iron deficiency anemia and anemia of chronic disease based on clinical pre-test probability and laboratory studies including ferritin, transferrin, TIBC percent saturation, and soluble transferrin receptor.
3. Describe the roles of each of the following in iron metabolism: hepcidin, ferritin, transferrin. Know what happens to each of these molecules during periods of prolonged inflammation.
4. Describe the consequences of iron overload to the organs of

the body.

1. Describe the clues that may alert a clinician to hemochromatosis both by clinical findings (symptoms) and laboratory findings.

**Thrombophilia**

1. List several of the most common inherited hypercoagulable states. Make a separate list of common acquired hypercoagulable states.
2. In a patient who presents with a thrombosis, describe the following:
   1. **Who** should be tested for thrombophilia?
   2. What tests should be ordered?
   3. What tests should NOT be ordered?
3. Make a table and describe the type of anticoagulant and the duration of anticoagulation for the treatment of thrombosis in patients with each of the inherited and acquired thrombophilic states in number 1.

**Anemia Cases**

1. Explain how to correct a reticulocyte count to determine whether the bone marrow is responding adequately to an anemia or not. (the kinetic model)
2. Give a differential diagnosis for microcytic, normocytic, and macrocytic anemia.
3. Understand how to distinguish between iron deficiency anemia and anemia of inflammation (also called anemia of chronic disease).
4. Understand how to diagnose alpha-thalassemia trait and beta-thalassemia trait based on

clinical presentation and hemoglobin electrophoresis results.

1. Describe the evaluation for suspected hemolytic anemia and the appropriate work up for hemolysis that is suspected due to mechanical destruction, immune destruction, or intrinsic red cell defects (hereditary or acquired). Know the findings on peripheral blood smear that are seen in microangiopathic anemia and autoimmune hemolytic anemia.