

September 14, 2021 –Dr. Shinar

Anemia

1. Make a table and distinguish between the clinical presentation, the laboratory findings (such as RDW, peripheral smear, etc), and the associated conditions seen in each of the four causes of microcytic anemia: 1) iron deficiency, 2) globin synthesis (thalassemia), 3) porphyrin synthesis (sideroblastic anemia and lead poisoning), and 4) anemia of chronic disease.
2. Explain how to correct a reticulocyte count to determine whether the bone marrow has adequate or inadequate response to an anemia.
3. Give a differential diagnosis for macrocytic anemia. (Note that this is not the same differential as B12 deficiency).
4. Know how to diagnose alpha-thalassemia trait and beta-thalassemia trait based on their clinical presentation and hemoglobin electrophoresis results.
5. 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.

Thrombocytopenia

1. Define thrombocytopenia in adults and know at what platelet count patients start to develop symptoms.
2. Describe the questions a physician should ask a patient about who is presenting with thrombocytopenia. List several diseases that cause thrombocytopenia in the following three categories: 1) decreased production, 2) increased sequestration, and 3) increased destruction.
3. Describe the first, most important lab test to order in the evaluation of a patient with thrombocytopenia.
4. Define factitious thrombocytopenia (also called pseudothrombocytopenia). Understand how to diagnosis it and its significance.
5. Make a table and distinguish between the 4 causes of emergent thrombocytopenia in terms of clinical presentation, laboratory evaluation, and management. (ITP, HIT, TTP, and HELLP syndrome).

Iron metabolism

1. Why are both iron deficiency states and iron overload states common?
2. 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.
3. Describe the consequences of primary and secondary iron overload to specific organs of the body.
4. Distinguish between iron deficiency anemia and anemia of chronic disease based on pre-test probability and iron studies including ferritin, transferrin, and percent saturation.
5. Describe the roles of each of the following in iron metabolism: Hepcidin, ferritin, transferrin. What happens to each of these molecules during periods of prolonged inflammation?