1. Red cell disorders

Introduction

- The anemias include the hypochromic anemias, the megaloblastic anemias, the hemolytic anemias, the aplastic/hypoplastic anemias, various pure red cell aplasias (PRCA), including the transitory form (Parvovirus B19), and the anemias associated with marrow infiltration, known as myelophthisic anemia, often called leukoerythroblastic anemia.
- The hypochromic anemias include iron deficiency, the α, β and other thalassemias, the sideroblastic anemias, that are usually dimorphic, and sometimes an anemia of a chronic disorder.
- The megaloblastic anemias are usually due to B12 or folic acid deficiency. On occasions it can be associated with anti-folate drug toxicity, with a myelodysplastic syndrome or a rare inborn error of metabolism.
- The hemolytic anemias (HA) can be immune or non-immune. Immune HA can be autoimmune, alloimmune or drug immune. The non-immune HA includes hereditary spherocytosis, hereditary elliptocytosis, a non-immune spherocytic HA associated with Clostridial septicemia, the hemoglobinopathies, HA in parasitic disease, such as malaria, microangiopathic HA (MAHA) and Heinz body HA, such as seen in an oxidative drug hemolysis.
- The aplastic/hypoplastic anemias can be drug-induced, idiopathic and less frequently associated with paroxysmal nocturnal hemoglobinuria (PNH) and hereditary causes (e.g. Fanconi’s anemia). PRCA includes Parvovirus B19 transitory red cell aplasia.
- The myelophthisic/leukoerythroblastic anemias are related to marrow infiltration in malignancy and less commonly with other types of marrow infiltration. It is seen in idiopathic myelofibrosis.
- These will be illustrated on the following slides.
- Various red cells such as target cells, stomatocytes, elliptocytes, tear drops will be shown and discussed.

Note: Normal peripheral blood and bone marrow cells will be presented at the beginning of the section entitled White cell disorders.