**Anemia:**

A significant reduction in red cell mass below normal levels and a corresponding decrease in the oxygen carrying capacity of the blood.

**Causes:**

1. Under production

2. Increased destruction/Hemolysis

3. Blood loss /bleeding

4. Multifactorial : a combination of these

**Symptoms:**

Depends on acuteness and severity of anemia. Symptoms can occur when anemia is chronic, however most patients are asymptomatic. Symptoms which relate to the underlying cause include non-specific complaints such as fatigue, headache, faintness, dyspnea, palpitations, intermittent claudication.

**Laboratory Findings:**

Red cell values: vary according to age, sex, pregnancy state

normal hemoglobin in men 13-18 g/dl normal MCV 76-96

normal hemoglobin in women 11.5 -16.5 normal MCV 76-96

in adults, severe anemia is defined by a hemoglobin of < 7 g/dL.

**Classification of anemia by size:**

1) Hypochromic microcytic anemia

a) Inherited: Thalassema, sideroblastic anemia

b) Acquired: iron deficiency , Anemia of chronic diseases

2) Macrocytic anemia :

a) With megaloblastic marrow: megaloblastic anemia

b) With normoblastic marrow: Hemolysis, acute bleeding,

3) Normchromic normocytic:-

a) Anemia of chronic disease

b) Early iron deficiency anemia

c) Aplastic anemia