ANAEMIA

- ☑ Defination
- ☑ Grading
- ☑ Classification
- ☑ RBC indices

 # Defination :- It is a clinical condition characterised by reduction in number of RBC's and/or reduction in content of Hb below normal limits.

 # Grading :- Mild Anaemia = Hb 8-12 gm/dl
Moderate Anaemia = Hb 5-8 gm/dl
Severe Anaemia = Hb <5 gm/dl

 # Classification :-

Anaemia
- Etiological (Whitby's)
- Morphological (Wintrobe's)

Etiological classification (Whitby's) :- OBO cause of anaemia

① **Haemorrhagic** (Anaemia d/t blood loss)

→ Acute blood loss
- Trauma
- Surgery

→ Chronic blood loss
- Hemorrhoides
- Esophageal varices
- Ulcer
- Menstruation

② **Hemolytic** (Increased RBC destruction)

- Intra-corpuscular defects
  - Hereditary spherocytosis
  - SCA, thalassaemia
  - G6PD deficiency
  - Erythroblastosis foetalis
- Extra-corpuscular defects
  - Malaria
  - Drugs - Quinine
  - Hypersplenism

③ **Decreased RBC production**

- Dietary deficiencies
  - Iron def.
  - Vit B12 def.
  - Folic acid def.
- Abnormal haemopoiesis (Aplastic anemia)
  - X-rays
  - γ-rays
  - cytotoxic drugs

Morphological classification (Wintrobe's) :- DBO size of RBC & Hb concentration

RBC size ⇩ / Hb conc. ⇨	Normochromic	Hypochromic
Microcytic	• Chronic infection	• IDA • Thalassaemia • Sideroblastic anaemia
Normocytic	• Acute Hge • Hemolytic anaemia (except thalassaemia) • Aplastic anemia	• chronic Hge
Macrocytic	• Megaloblastic anaemia (Vit B12, FA, IF)	• Liver disease

RBC indices

Hemoglobin → 13.6 - 17.2 g/dl

Hematocrit → 39 - 49 % (% of vol. of RBC in blood)

MCV → 82 - 96 fL (avg. vol. of RBC) < Microcytic, Normocytic, Macrocytic

MCH → 27 - 33 Pg (avg. Hb in RBC) < Normochromic, Hypochromic

MCHC → 33 - 37 g/dl (avg. conc. of Hb in given vol. of RBC)

Red cell distribution width → 11.5 - 14.5 (measurement of variation of size in RBC (anisocytosis))

Signs & Symptoms of Anaemia

- Pallor
- Easy fatigue
- Weakness
- Dizziness