Assessment and Management of Patients with hematologic Disorders

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Blood Study

Methods of obtaining blood:

Venipuncture
Finger puncture
Bone marrow aspiration

Anemia

A low red cell count and a below normal hemoglobin or hematocrit level.

Pathophysiology of Anemia

Bone marrow failure

Excessive red cell loss or both.

(**Erethropoiesis**) may occur as a result of a **nutritional deficiency, toxic exposure, tumor invasion, or unknown cause.**

Red blood cell may be lost through **hemorrhage** or **hyperhemolysis.** Increase destruction.

Etiology of Anemia

Production defects:

Nutritional deficiencies - Vitamin B12, folate or iron deficiency.

Inflammation/chronic disease.

Primary marrow disorders-

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Blood loss.

Blood destruction.

Etiology of Anemia

Blood Loss:

bleeding, such as from repeated venipuncture in patients undergoing a medical evaluation, blood losses associated with repeated hemodialysis procedures, or excessive blood donations

Bleeding during or after surgical procedures

Clinical Manifestation

Hb level between 9g/100ml – 11g/100ml

No symptoms other than **tachycardia** on **exertion**
Exertional dyspnea:

Is likely to occur below, but not above 7.5mg/100ml

Weakness , only below 6g/100ml , **dyspnea** at rest ,below 3gm/100ml. And cardiac failure.

Classification of Anemias

Hypoproliferation anemia :The bone marrow is unable to produce adequate numbers of cells, the reticulocyte count is depressed.

Hypoproliferation anemia

1. A plastic Anemia
2. Iron Deficiency Anemia
3. Megaloplastic Anemia
4. Vitamin B12 Deficiency
5. Folic Acide Deficiency

classification of Anemias

Hemolytic Anemia

Abnormalities is usually within the red cell itself:

Sickle cell anemia

G-6-pD

Hemolytic Anemia

1. Inhereted Hemolytic Anemia : Spherocytosis , sickle cell anemia, other hemoglobinopathies(Thalassemia)

2. Acquired Hemolytic Anemia