

# Anemia

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Blood study

Methods of obtaining blood:

- Venipuncture
- Finger puncture
- Bone marrow aspiration

# Pathophysiology of anemia

- Bone marrow failure
- Excessive red cell loss
- Erythropoiesis (process of formation of RBCs) 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 B<sub>12</sub>, folate or iron deficiency
- Inflammation/ chronic disease
- Primary marrow disorders

# ● Blood loss

- Bleeding, such as from repeated venipuncture in patients undergoing a medical evaluation, blood losses associated with repeated hemodialysis procedure, or excessive blood donation. Bleeding during or after surgical procedures.
- • Blood destruction

# Clinical manifestations

- Hb level between 9mg/ 100ml – 11mg/ 100ml
- No symptoms other than tachycardia on exertion

Exertional dyspnea:

- Is likely to occur below, but not above 7.5mg/ 100ml
- Weakness, only below 6mg/100ml , dyspnea at rest, below 3mg/ 100ml

# Classification of anemia

- Hypoproliferation anemia: the bone marrow is unable to produce adequate numbers of cells, the reticulocyte count is depressed.
- A plastic anemia(*decrease in or damage to marrow stem cell*)
- Iron deficiency anemia
- Vitamin B12 deficiency (*Megaloplastic A*)
- Folic acid deficiency (*Megaloplastic A*)

# Hemolytic anemia

- Abnormalities is usually within the red cell itself:
- Sickle cell anemia, G-6- PD(Glucose-6- phosphate dehydrogenase deficiency)
  1. Inherited hemolytic anemia: spherocytosis, sickle cell anemia, other hemoglobinopathies (thalassemia)
  2. Acquired hemolytic anemia

Chart 33-1 p. 911

# Signs and symptoms

- Weakness, fatigue, and general malaise are common
- Pallor of the skin and mucous membrane
- Jaundice may be present in patient with hemolytic anemia.
- Tongue may be *smooth* and red( in iron deficiency anemia)
- Dyspnea
- Tachycardia and tachypnea
- Cold extremities



# Nursing diagnosis

- **Fatigue** related to decreased hemoglobin
- **Altered nutrition**, less than body requirements, related to inadequate intake of essential nutrition.
- **Altered tissue perfusion** related to inadequate hemoglobin and hematocrit.
- **Noncompliance** with prescribed therapy.

*Collaborative problems/ potential complications*

*Heart failure*

*Angina*

*Parasthesis*

*confusion*

# Nursing interventions

- Maintain the patient diet and with increased fluid
- Force fluid
- Administer oxygen
- Assess cardiovascular and respiratory status
- Keep the patient in semi- fowler's position
- Monitor and record VS, UO, I/O, and laboratory studies
- Administer medication, as prescribed
- Allay the patient anxiety
- Monitor stool, urine, and emesis for occult blood
- Provide mouth, skin, and food care
- Keep the patient warm
- Protect the patient from falls