D.PHARM • SECOND YEAR

Pharmacotherapeutics

CHAPTER 2.6

Haematological Disorders

ENGLISH CHAPTER NOTES



DIPLOMA IN PHARMACY

IRON DEFICIENCY ANEMIA (IDA)

DEFINITION

- Anemia caused by insufficient body iron, reducing hemoglobin synthesis and oxygen transport.
- Typically microcytic (small RBCs) and hypochromic (pale RBCs).
- The most common type of anemia; women and children are especially affected.

WHY IRON MATTERS

- Hemoglobin: carries oxygen in blood.
- Myoglobin: stores oxygen in muscle.
- Enzymes: cytochromes and catalase.

INCREASED IRON LOSS

- Chronic GI bleeding: peptic ulcer, hemorrhoids or colon cancer.
- Menorrhagia: heavy menstrual bleeding.
- Hookworm infestation.

LOW INTAKE

Insufficient iron-rich food. A poorly planned vegetarian diet or limited access to varied food can increase risk.

REDUCED ABSORPTION

- Celiac disease and other malabsorption disorders.
- Post-gastrectomy.
- Chronic diarrhea.

GREATER REQUIREMENTS

Pregnancy, infancy and adolescence; nutritional needs also matter during lactation.

BASIC MECHANISM

Inadequate intake/absorption or excess loss → depleted iron → reduced hemoglobin synthesis → impaired oxygen delivery.

IRON DEFICIENCY ANEMIA (IDA)

STAGES OF IRON DEFICIENCY

1. Depleted stores: low ferritin. → 2. Iron-deficient erythropoiesis: low serum iron, high TIBC. → 3. IDA: low Hb, microcytic RBCs.

TIBC = total iron-binding capacity. Ferritin may be misleadingly normal or high during inflammation.

GENERAL SYMPTOMS

- Fatigue and weakness.
- Dizziness.
- Pallor, especially conjunctiva and palms.
- Breathlessness on exertion.
- Palpitations.

IRON-SPECIFIC FEATURES

- Koilonychia: spoon-shaped nails.
- Angular stomatitis: sore mouth corners.
- Glossitis: smooth, sore tongue.
- Pica: craving non-food items such as clay, ice or paper.
- Restless legs syndrome in some patients.

DIETARY CARE

- Animal sources: red meat, poultry, liver and eggs.
- Plant sources: legumes, green leafy vegetables and dried fruits.
- Vitamin C foods, e.g., citrus and tomatoes, improve non-heme iron absorption.
- Avoid tea/coffee with meals; polyphenols reduce iron absorption.
- Identify and treat the cause, such as a bleeding ulcer or heavy menstrual bleeding.

IRON DEFICIENCY ANEMIA (IDA)

ORAL IRON

Ferrous sulfate, ferrous gluconate or ferrous fumarate.

ADULT DOSING

- Traditional range: 100–200 mg elemental iron/day.
- Current practice often starts with 50–100 mg elemental iron once daily.
- Every-other-day dosing may improve tolerance.

Individualize dose; elemental iron is not the total iron-salt weight.

ADMINISTRATION

- Best absorbed on an empty stomach; take with food if needed for tolerance.
- Vitamin C may aid absorption.
- Common effects: nausea, constipation and dark stools.

Do not assume every black, tarry stool is a harmless drug effect.

INTRAVENOUS IRON

- For intolerance, poor absorption, inadequate oral response or urgent replacement needs.
- Iron sucrose, ferric carboxymaltose or iron dextran.
- Give under supervision; monitor for infusion reactions.

BLOOD TRANSFUSION

Reserved for selected severe symptomatic anemia or circulatory compromise; not routine replacement of iron therapy.

MONITORING

- Hb, reticulocyte response and iron stores (ferritin).
- Review Hb response within 2–4 weeks.
- Usually continue iron for about 3–6 months after Hb normalizes, guided by response and stores.
- Check adherence, ongoing bleeding or malabsorption if response is poor.

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