

IRON DEFICIENCY ANEMIA



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INTRODUCTION:

Iron deficiency anemia is a type of anemia that occurs when there is a lack of sufficient iron in the body to produce hemoglobin. Hemoglobin is a protein in red blood cells that carries oxygen to all parts of the body. Without enough hemoglobin, the body's tissues and organs do not receive enough oxygen.

CAUSES/ETIOLOGY:

Inadequate intake of iron: The body needs iron to produce hemoglobin, and if you don't get enough iron from your diet, your body will eventually deplete its iron stores and become anemic.

Blood loss: Blood loss can occur from injury, surgery, heavy menstrual bleeding, or a gastrointestinal condition such as ulcers or inflammatory bowel disease. Chronic blood loss can gradually deplete the body's iron stores, leading to iron deficiency anemia.

Pregnancy and breastfeeding: During pregnancy and breastfeeding, the body requires more iron to support the growing fetus or to produce breast milk. If the woman's iron intake is insufficient, she may become anemic.

Malabsorption: Certain conditions that affect the digestive system can interfere with the body's ability to absorb iron, such as celiac disease, Crohn's disease, and gastric bypass surgery.

Chronic kidney disease: People with chronic kidney disease often have low levels of erythropoietin, a hormone that stimulates red blood cell production. Without enough erythropoietin, the body can't produce enough red blood cells, leading to anemia.

Genetics: Some people are genetically predisposed to iron deficiency anemia, such as those with a family history of the condition or those with certain genetic disorders that affect iron metabolism.

PATHOGENESIS:

- Iron is an essential mineral that the body cannot produce on its own, so it must be obtained through the diet.
- Foods that are high in iron include red meat, poultry, fish, beans, lentils, tofu, and fortified cereals.
- If a person's diet does not include enough of these iron-rich foods, the body's iron stores can become depleted over time, leading to anaemia.
- Other factors that can contribute to iron deficiency anemia include blood loss, increased demand for iron, and impaired absorption of iron.

CLINICAL MANIFESTATION:

Fatigue: Feeling tired or weak, even after getting enough sleep or rest, is a common symptom of anemia.

Pale skin: A lack of hemoglobin can cause the skin to become pale or even yellowish.

Shortness of breath: When the body does not get enough oxygen, it can cause shortness of breath or difficulty breathing.

Chest pain: Severe iron deficiency anemia can cause chest pain or an irregular heartbeat.

Headaches: Iron deficiency can cause headaches, especially in women.

Dizziness or lightheadedness: A lack of oxygen to the brain can cause dizziness or lightheadedness.

Cold hands and feet: Anemia can cause a reduced flow of blood to the extremities, leading to cold hands and feet.

Restless legs syndrome: Iron deficiency anemia has been linked to restless legs syndrome, a condition characterized by an uncontrollable urge to move the legs.

Brittle nails: Anemia can cause the nails to become brittle and break easily.

CLINICAL EVALUATION/DIAGNOSIS:

Complete blood count (CBC): This blood test measures the levels of hemoglobin, hematocrit, and red blood cells in the body. In iron deficiency anemia, these levels will be lower than normal.

Serum ferritin test: This test measures the levels of ferritin, a protein that stores iron in the body. In iron deficiency anemia, ferritin levels are low.

Iron level test: This test measures the amount of iron in the blood. Low levels of iron can be a sign of iron deficiency anemia.

Total iron binding capacity (TIBC) test: This test measures the amount of transferrin, a protein that transports iron in the blood. In iron deficiency anemia, the TIBC is usually high because there is not enough iron in the blood for the transferrin to carry.

Peripheral blood smear: This test involves examining a sample of blood under a microscope to look for abnormal red blood cells, which can be a sign of iron deficiency anemia.

PHARMACOLOGICAL MANAGEMENT:

Ferrous sulfate: This is the most common type of iron supplement and is available over the counter. It is usually taken two to three times per day.

Ferrous gluconate: This iron supplement is also available over the counter and is typically taken two to three times per day.

Ferrous fumarate: This iron supplement is usually prescribed by a doctor and is taken once or twice per day.

Polysaccharide iron complex: This type of iron supplement is less likely to cause gastrointestinal side effects, such as constipation or upset stomach, than other types of iron supplements. It is usually taken once or twice per day.

NON PHARMACOLOGICAL MANAGEMENT:

Eating a diet rich in iron: Including foods that are high in iron in your diet can help prevent iron deficiency anemia. Good sources of dietary iron include red meat, poultry, seafood, beans and legumes, dark leafy greens, and fortified cereals and breads.

Eating foods that help the body absorb iron: Some foods can help the body absorb iron more effectively. These include foods high in vitamin C, such as citrus fruits, strawberries, kiwi, and bell peppers.

Avoiding foods that inhibit iron absorption: Some foods can inhibit the body's ability to absorb iron. These include tea, coffee, and dairy products. It's a good idea to avoid consuming these foods at the same time as iron-rich foods.

Taking iron supplements: If you are at risk for iron deficiency anemia, such as during pregnancy or if you have a gastrointestinal condition that can cause blood loss, taking iron supplements can help prevent anemia from developing.

Treating underlying medical conditions: If you have a medical condition that increases your risk for iron deficiency anemia, such as celiac disease or inflammatory bowel disease, it's important to work with your healthcare provider to manage the condition and prevent anemia from developing.

Regular check-ups: Getting regular blood tests can help identify anemia early, before it becomes severe. This is particularly important for individuals who are at higher risk for iron deficiency anemia.