وزارة الصحة
Ministry of Health

Thalassemia

Overview:

- Caused by a genetic disorder of red blood cells.
- Symptoms depend on the type and severity of the disease.
- Spleen hyperplasia may be caused by iron accumulation inside it rather than being reused.
- For prevention, a comprehensive medical examination must be conducted before marriage.
- Consult your doctor before taking any medicine or dietary supplement.

Definition:

A genetic disorder that occurs in blood cells, in which hemoglobin (the main component of red blood cells and oxygen transporter) is lower than normal, causing a decrease in blood oxygen level.

Other Names:

Also called Mediterranean anemia, because the disease originated in the Mediterranean basin.

Types:

The types of thalassemia depend on the following:

- The affected part of hemoglobin (alpha or beta).
- Severity.

First type: Alpha Thalassemia:

Hemoglobin consists of four genetic chains of alpha type, two from the father and two from the mother. When there is an imbalance or failure in these chains produce so-called (thalassemia alpha).

- **When there is an issue in one chain:**
  A person is a carrier of the infected gene with no apparent symptoms.

- **When there is an issue in two chains:**
  A person with these genes has minor symptoms that may not appear but can be detected by a blood test.
- **When there is an issue in three chains:**
  The patient would have severe anemia, symptoms vary between moderate and severe, and may develop an enlarged spleen and bone deformity.
- **When there is an issue in four chains:**
  Causes the death of the fetus before birth or immediately after birth.

Second type: Beta Thalassemia:

Hemoglobin consists of two beta chains, each of which is inherited by a parent, and when a malfunction occurs, the so-called beta thalassemia is produced.

- **When there is an issue in one chain (minor thalassemia):**
  No apparent symptoms are experienced except for a mild anemia that appears during routine blood tests. The patient needs blood transfusion to be able to live normally.
- **When there is an issue in two chains (major thalassemia):**
  The patient suffers from severe anemia, bone deformity and spleen enlargement, and needs regular blood transfusions to survive normally. These symptoms do not appear when the baby is born; But begin to appear during the first two years of life.

Causes:

It is caused by a genetic defect that affects the process of producing hemoglobin, and this defect is genetically transmitted from parents to children.

Symptoms:

Depending on the type and severity of the disease, some children develop symptoms from birth, while others develop symptoms during the first two years of life, and may not show symptoms in patients with the disease (with disorders in one gene).

Main symptoms include:

- General weakness or tiredness.
- Pale, yellowish skin.
- darkening urine
- Slow growth
- Shortness of breath.
- Flatulence.
- Bone deformities.
- Frequent inflammations.

Complications:

- Worsening anemia and a sense of fatigue and constant tiredness.
- Delayed child development and delayed puberty.
- Enlarged spleen and flatulence due to iron accumulation inside the spleen rather than being reused.
- Blood clotting as a result of splenectomy, which increases the number of platelets.
- Lacking of Folic acid and vitamin B12.
- Bone deformities.

Treatment:

Treatment of thalassemia depends on the type and severity of thalassemia. Treatment for mild to severe conditions includes:

- **Blood transfusion:**
  Frequent red blood cell transfusions are the main treatment for people with moderate or severe thalassemia.
- **Stem cell transplant (and bone marrow transplant).**
  Stem cell transplant can be used to treat severe thalassemia.
- **Treatment of iron accumulation:**
  Doctors remove excess iron from the body. Some may use some medications to treat iron overcrowding; it may be a liquid medicine that is given slowly under the skin, or a contraceptive.

Health Tips for Thalassemia patients:

- Avoid taking iron tablets, vitamins or other iron-containing supplements without doctor supervision.
- Eat a healthy, balanced diet.
- Folic acid may be recommended to help the body produce red blood cells, as well as taking calcium and vitamin D to maintain bone health.
- Take care of personal hygiene to avoid infection, especially in cases where the spleen is removed.
- Make sure to take vaccines (such as: Annual flu vaccine ... And others to prevent infection

Prevention:

Thalassemia is a genetic disease where it cannot be prevented or avoided. If the person is infected or carriers of the disease, it is best to see a genetic diseases specialist.

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To reduce the chance of thalassemia transmission to children, it is recommended to conduct a comprehensive medical examination before marriage where it is possible to know the possibility of genes infected with the disease in men or women.

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