وزارة الصحة
Ministry of Health

Sickle cell anemia

Overview:

- Sickle cell anemia is a disease where the body produces abnormal red blood cells looking like a crescent or sickle.
- Sickle cell disease is hereditary and not contagious.
- There is a difference between sickle cell anemia and iron deficiency anemia.
- Sickle cell anemia affects millions worldwide.
- Normal red blood cells live for 120 days; but sickle cells last only 10 to 20 days.
- It can be detected by blood tests.
- There is no definitive cure; however, there are medications that can relieve pain and help prevent problems associated with the disease.

Introduction:

The body produces normal red blood cells that are flexible and round and can easily move through the blood vessels. In sickle cell anemia, red blood cells become rigid and sticky and form like a sickle or crescent moon.

These irregularly shaped cells can get stuck in small blood vessels, which can slow or inhibit the flow of blood and oxygen to parts of the body.Red blood cells live for 120 days before the body needs to be replaced; but sickle cells usually die within 10 to 20 days, causing a red blood cell deficiency that leads to (anemia).

Sickle cell anemia is a hereditary type that is transmitted by genes from parents to their children, that is, it is not contagious and cannot be picked up by a person (like: (cold or infection) to another.

Causes:

A defect in the gene responsible for the formation of hemoglobin in the body, which changes the shape of red blood cells to become inflexible and sticky.

Symptoms:

Signs and symptoms of sickle cell anemia, which vary from one person to the other and change over time, include:

- Pale skin
- Fatigue and exhaustion
- Severe pains
- Vision problems
- painful swelling in feet and hands
- chronic pain episodes
- delayed growth
- Repetitive bacterial infections.

Diagnosis:

Diagnosis is done by a doctor after studying the symptoms and pathological history of adults and children and conducting blood tests to examine hemoglobin. If the patient has the disease, the doctor may suggest additional tests to check for possible complications.

Risk Factors:

- Both mother and father are carriers of the disease.
- Both mother and father have the disease.
- One of the parents is a carrier and the other has the disease.

Complications:

Sickle cell anemia can lead to a range of complications, including:

- brain stroke.
- Acute chest syndrome that causes chest pain, fever and difficulty breathing.
- Hypertension in the lungs (pulmonary hypertension).
- Organ damage including kidney, liver and spleen.
- Blindness.
- Leg blisters.
- Gallstones.
- Sexual dysfunction.

Treatment:

There is no definitive cure; however, there are medications that can help prevent problems associated with the disease.

- Drugs to relieve the pain
- Folic acid supplements to strengthen healthy blood cells.
- Vaccination and antibiotics to prevent infection.
- In severe cases the patient may need blood transfusion or surgery.

Prevention:

- Abidance by a comprehensive pre-marital medical examination helps to reduce intergenerational transmission of sickle cell disease.
- If you are pregnant, you should see a genetic counselor before deciding to have children.

If you have sickle cell anemia, you should:

- Drink plenty of fluids and follow a healthy diet.
- Avoid exposure to extreme cold or heat.
- Avoid high places such as aircraft and others.
- Make sure you have enough oxygen during exercising and when you are in the mountains.

Frequently Asked Questions:

1. **What is the difference between sickle cell anemia and iron deficiency anemia?**

Sickle cell anemia breaks red blood cells, whereas in anemia, red blood cells are healthy; but their number is less than normal.

2. **Is there a difference between the carrier and the patient?**

Yes, sickle cell carriers are caused by inheriting one copy of the gene from a parent. Having Sickle cell disease is caused by inheriting the gene from both parents.

3. **Can a person develop from a sickle cell carrier to an infected person?**

No, a person cannot develop from a carrier to an infected person; but sickle-cell carriers can pass the gene to their children.

4. **What precautions should a carrier take when exercising?**

They should take into account the same precautions that can prevent injuries and diseases associated with exercise, including heat and moisture considerations, drinking adequate fluids, resting as needed, and not exceeding the current level of fitness.

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Misconceptions:

- **There is a definitive treatment for sickle cell anemia.**

There is none; however, research is underway on bone marrow transplantation, gene therapy, and new medicines for sickle cell anemia.

- **Sickle cell anemia patients are recommended to use iron supplements.**

Iron supplements should not be used to treat sickle cell anemia without consulting your doctor as they may cause harm.

- **There is vaccination for the prevention of sickle cell anemia.**

There is none, because it is transmitted by the parents' genes.

- **Any sickle cell anemia carrier must refrain from marriage because of the risk of transmission to children.**

It is possible for a carrier to marry a healthy person (not a carrier) and have healthy children.

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