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Opinion Article

An Overview on Thalassemia Causes, Types and its Preventions

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DESCRIPTION

Thalassemia is a group of genetic disorders that affect the production of hemoglobin in the body. Hemoglobin is a protein that carries oxygen throughout the body, and a deficiency in its production can lead to anemia, fatigue, and a range of other complications. Thalassemia is caused by mutations in the genes that control hemoglobin production, and it is most common in people of Mediterranean, African, and Southeast Asian descent.

There are two main types of thalassemia: alpha and beta. Alpha thalassemia occurs when there is a defect in the genes that control the production of alpha globin, which is a component of hemoglobin. Beta thalassemia occurs when there is a defect in the genes that control the production of beta globin, another component of hemoglobin. Depending on the severity of the mutations, thalassemia can be mild or severe.

Symptoms of thalassemia can vary depending on the type and severity of the condition. Mild cases may not have any symptoms at all, while more severe cases can cause fatigue, weakness, shortness of breath, pale skin, yellowing of the skin and eyes (jaundice), and bone deformities. In severe cases, thalassemia can lead to heart failure, liver damage, and other serious complications.

Thalassemia is usually diagnosed through blood tests, which can measure the levels of hemoglobin and other blood components. In some cases, genetic testing may also be necessary to identify the specific mutations that are causing the condition.

There is no cure for thalassemia, but treatments are available to manage the symptoms and complications of the condition. Blood transfusions are commonly used to replace the deficient hemoglobin, and chelation therapy can help to remove excess iron from the body, which can build up as a result of frequent transfusions. In some cases, bone marrow or stem cell transplants may also be an option, particularly for severe cases of thalassemia.

Preventing thalassemia can be challenging, as it is a genetic disorder. However, genetic counseling can help to identify the risk of passing on the condition to children, and in some cases, Pre-Implantation Genetic Diagnosis (PGD) or *In Vitro* Fertilization (IVF) may be used to select embryos that do not carry the mutations that cause thalassemia.

In conclusion, thalassemia is a genetic disorder that affects the production of hemoglobin in the body. It is most common in people of Mediterranean, African, and Southeast Asian descent, and can cause a range of symptoms and complications depending on the type and severity of the condition. While there is no cure for thalassemia, treatments are available to manage the symptoms and improve quality of life for affected individuals. Genetic counseling and reproductive technologies can also help to prevent the condition from being

Causes of thalassemia and risk factors

Thalassemia is hereditary. It occurs when inherit parentally inherited altered genes that alter our hemoglobin. That is a birth right. Thalassemia is not contagious in the same way that the common cold or the flu are.

We may get thalassemia if both of our parents are carriers. Depending on the type of protein involved, if we inherit two or more copies of faulty genes from our parents, could have mild to severe thalassemia. Those from Asia, Africa, the Middle East, and Mediterranean nations like Greece or Turkey tend to experience it more frequently.

When we have alpha thalassemia, our body produces insufficient amounts of the protein chain needed to create hemoglobin. We don't produce enough beta when we have beta thalassemia.

The alpha protein chain of hemoglobin is produced by four genes in our body. Each parent gives us two. We will carry thalassemia even if we just have one faulty copy of an alpha gene. Mild alpha thalassemia results from two defective copies of an alpha gene. Our alpha thalassemia will be more dangerous if have more aberrant copies. Infants who have four aberrant copies of the alpha gene frequently die soon after delivery or are stillborn.

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