

ALPHA THALASSEMIA TRAIT IN THE AFRICAN AMERICAN A Guide for Parents and Primary Care Physicians

Our pediatric hematology staff at Children's Medical Center Dallas is often asked to evaluate children thought to have a condition called "alpha thalassemia trait." The purpose of this information sheet is to describe it for patients, their parents, and their physicians.

Alpha thalassemia trait is a genetic (inherited) abnormality of the hemoglobin, the red substance in the cells that carries oxygen in the bloodstream. Alpha thalassemia may result in a very mild anemia (low blood hemoglobin count) and decreased size of the red blood cells. It is commonly mistaken for iron deficiency (which also causes anemia and small red blood cells). However, neither iron nor any other treatment is necessary for alpha thalassemia trait.

What do the words "alpha", "thalassemia," and "trait" mean? Alpha refers to one of the building blocks of hemoglobin (the others are called beta, delta, and gamma). In alpha thalassemia there is a reduction in the number of these alpha building blocks. Thalassemia is the general name given to a group of blood conditions where there is a reduction in one or more of the hemoglobin building blocks. Thalassemias are among the most common inherited conditions in the world, seen not only in those of African ancestry, but also in persons from southern Europe, the Middle East, and throughout Asia. Trait simply means having a "trace" of the blood condition without it causing any problems.

Alpha thalassemia trait in persons of African ancestry is not really a disease. It does not cause illness. Persons with it have no problems resulting from it. No treatment is available or necessary. It does not turn into a more serious blood condition. Although alpha thalassemia trait can potentially be passed on to one's children when one's partner also has alpha thalassemia trait, it causes no problems in them either.

Alpha thalassemia trait may come to the attention of doctors in one of two ways:

(1) A very mild anemia (a slightly low hemoglobin count) and small red blood cells (reduced MCV) at the time of a blood count may alert the primary doctor that something is wrong. Often iron deficiency is suspected as the diagnosis, but iron treatment is ineffective.

(2) The other way alpha thalassemia is suspected is a result of the newborn screening test done on all babies born in Texas. This screening is done for sickle cell disease, which also occurs in African Americans but is totally different from alpha thalassemia and other serious genetic conditions. This routine newborn screening test also picks up alpha thalassemia trait because of the presence of hemoglobin Bart's in the newborn baby's blood. Although the hemoglobin Bart's goes away after several months, it is very specific for the baby having alpha thalassemia trait.

Summary: Alpha thalassemia trait is a common cause of mild microcytic anemia (anemia due to small red blood cells). It occurs in 3% of African Americans. It does not cause disease. It does not turn into other blood conditions, and it does not require treatment. However, it is present lifelong, so those that have alpha thalassemia should be aware of it. In conclusion, there is no reason to worry about alpha thalassemia trait. That is good news!

Note: This information sheet pertains to alpha thalassemia only in those of African ancestry. In persons of southern European, Middle Eastern, or Asian ancestry, alpha thalassemia trait can be a more significant problem since those who have it may pass on a much more serious condition to their offspring. Such individuals with this problem should consult their physician or a genetic counsellor.

This information sheet was prepared by members of the Hematology staff at Children's Medical Center Dallas.

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