

Low Level of “Mean Cell Volume” & Thalassemia

Thalassemia is a common hereditary blood disorder which is transmitted by a gene, and presents in two forms – thalassemia major and thalassemia minor. About 8% of the population have the genes of thalassemia. Most of them have only inherited one abnormal thalassemia gene – they are the thalassemia minor and known as “thalassemia carriers”. They usually do not experience any symptoms from this condition and do not require any special treatment. A person who has inherited two abnormal thalassemia genes suffers from thalassemia major, which is a severe form of anaemia. There are two main types - α thalassemia and β thalassemia. α thalassemia major can lead to intrauterine or neonatal death. And β thalassemia major sufferers without stem cells transplantation generally have a shorter lifespan and require lifelong blood transfusion and special treatment.

The blood test for Mean Cell Volume (MCV) is a simple and easy test which helps to find out who have a higher chance of carrying the thalassemia genes. This test is now included in the routine blood tests done for pregnant women.

If a pregnant woman is found to have MCV equal or below 80 fl, she may be normal, suffering from thalassemia or iron-deficiency anaemia. About 60% of these women are thalassemia carriers and their husbands should receive the same blood test.

If MCV of the husband is normal, it is very unlikely that he is a thalassemia carrier, and their fetus should not have thalassemia major. Therefore, the couple should be reassured and no further blood tests are necessary.

If both of the couples have low MCV, their chance of being a thalassemia carrier-couple is 40%. They will be referred to the Antenatal Specialist Clinic or Diagnostic Clinic for further blood tests. If they are proved to be a thalassemia carrier-couple, their child will have 25% chance of suffering from thalassemia major. The doctor will make a confirmed diagnosis to guide the subsequent discussion with the couple and management of the pregnancy.