**Original article:**

**Evaluation of blood indices and peripheral smear examination in beta thalassemia patients**

**1Dr. Gauravi A Dhruva, 2Dr. Amit H Agravat, 3Dr. Kinjal H Kotak**

1Professor and Head, Department of Pathology, PDU Medical College, Rajkot.

2Associate Professor, Department of Pathology, PDU Medical College, Rajkot.

32nd year resident, Department of Pathology, PDU Medical College, Rajkot.

**Correspondence author:** Dr. Kinjal Kotak ; Email: kinjalkotak965@gmail.com

**ABSTRACT:**

**Introduction**: There are certain conditions with genetic significance which may affect the life of people even with no any symptoms. One of the most common examples is thalassemia. It is a quantitative hemoglobinopathy with the reduced synthesis of the globin chains of haemoglobin. It is one of the major health related challenges faced by the society.

**Material and methods:** Study was done at Central clinical laboratory, Department of Pathology, PDU Medical College Rajkot. Study participants were those who were admitted in PDU hospital as well as known cases of thalassemia major. Blood samples collected in EDTA(Ethylene diamine tetra acetic acid) vaccutte were tested in the automated cell counter and peripheral smear examination was done from the slides stained in Romanowsky stains.

**Results**: Automated cell counters and peripheral smear examination revealed many abnormalities in the blood indices and red blood cells lineage which helped to differentiate among thalassemia major, thalassemia minor as well as iron deficiency anaemia.

**Conclusion**: This study shows the importance of peripheral smear examination as a primary step in suspicion of diagnosis of thalassemia trait patients and iron deficiency anemia patients. Also the haemoglobin and red blood cell abnormalities in thalassemia major patients are described. These help the clinicians to monitor their blood transfusion requirements in these patients as well as to screen the heterozygous patients so as to reduce the birth rates of thalassemia major patients.

**Keywords:** Thalassemia, peripheral blood findings, red cell abnormalities.