CLINICAL SIGNIFICANCE OF PHENOTYPE-MATCHED RBC TO PATIENT WITH THALASSEMIA

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Introduction: Auto-immune Haemolytic Anaemia (AIHA) is a rare red blood cell disorder that occurs when antibodies directed against a person's own red blood cells cause them to rupture, leading to increased hemolysis. Hemoglobinopathies are a group of inherited disorders because of abnormalities in Hb synthesis or Structure.

Case Report: A case of an 8-year-1-month-old male, with a known case of Thalassemia Intermedia was on/off on transfusion. At the age of 07 years patient was admitted with Hyper Hemolysis Syndrome and Hb of 2.4 gm/dl, after transfusion on 2 units of PCV; his Hb reached to 6.1 gm/dl. After 1 year this patient presented with anemia (Hb 3.1 gm/dl), and samples were received for cross-match. At this time, his Blood Group showed discrepancy and the Cross-Match showed incompatibility. So we did DAT, IAT, and Auto, which were also positive. His Biochemical parameters showed Increased Bilirubin and LDH levels, Decreased Hb and Haptoglobulin levels, and reticulocytes present in peripheral blood which indicates a hemolysis picture. The patient also showed Hemoglobinuria and hemoglobinaemia. Due to decreasing Hb level and to find a compatible unit, further investigations like antibody screening and antigen phenotype was performed.

Result: On 11 cell panel, suspected antibodies were Anti-E, Anti-Kell, Anti-M & Anti-S.

On Phenotyping result M and S antigens were present. Voluntary donors with the same phenotype could not come for donation. To obtain a compatible RBC unit, we asked his parents' sample for cross-match and the cross-match showed compatibility with his father's sample. To verify this, we did father phenotyping and it has shown similar findings except for P antigen. His father came for blood donation. After all mandatory procedures, Leuco-reduced Irradiated blood was issued to this patient. After the transfusion of a compatible PRBC unit his Hb reached to 8.7 gm/dl and he was discharged.

Conclusion: Haemoglonipathies and Thalassemia are common disorders in our country. In Thalassemia, due to multiple transfusions, there are high chances of developing allo and autoantibodies. A phenotyped matched Few donors should be kept in reserve for each patient who is transfusion dependent.

Keywords: Thalassemia Intermedia, AIHA, Antigen phenotype