

## Hematology 2019: Red cell autoimmunization in multiply transfused thalassemia patients- Rajendra Chaudhary- Sanjay Gandhi Postgraduate Institute of Medical Sciences

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Thalassemia is a major health problem in India. Transfusion support remains the mainstay of treatment. Red blood cell alloimmunization is an important complication in transfusion-dependent patients. The study was conducted to determine alloimmunization prevalence and to evaluate risk factors that could influence alloimmunization to make strategies to minimize transfusion-associated risks in those patients. Clinical, demographic, allo and autoantibody status and transfusion records of 400 thalassemia patients at our hospital were studied. Patients with and without alloantibodies were compared to find significant differences for age, gender, race, age at start of regular transfusions and splenectomy. Thirty six (9 %) developed 42 clinically significant alloantibodies. Majority, 27 (65 %) of the alloantibodies were of Rh system. Twenty two (5.5 %) of the 400 patients developed autoantibodies. Patient age was found to be significantly higher in alloimmunized patients than in non alloimmunized patients. Rate of alloimmunization increased with the number of units transfused. Patients who received unfiltered blood had a higher alloimmunization rate compared to those who always received leukoreduced blood. Patients who underwent Splenectomy had a higher alloimmunization rate compared to those without splenectomy. The frequency of red cell alloimmunization in thalassemia patients from our center is moderate. Implementation of policy of universal leukoreduction may help in minimizing alloimmunization. However, policy of providing extended phenotype matched blood may not be cost effective in our setting because of antigenic concordance between transfusion dependent patients and blood donors in general.

Red blood cell (RBC) alloimmunization and autoimmunization remain a major problem in transfusion dependent thalassemic patients. There is a paucity of data on the incidence of RBC alloimmunization and autoimmunization in thalassemic patients from eastern part of India, as pretransfusion antibody screening is not routinely performed. Aims. To assess the incidence of RBC alloimmunization and autoimmunization in transfusion dependent thalassemic patients in eastern India. Materials and Methods. Total 500 thalassemia cases were evaluated. The antibody screening and identification were performed with commercially available panel cells (Diapanel, Bio-rad, Switzerland) by column agglutination method. To detect autoantibodies, autocontrol and direct antiglobulin tests were carried out using polyspecific coombs (IgG + C3d) gel cards in all patients. Results. A total of 28 patients developed RBC alloimmunization (5.6%) and 5 patients had autoantibodies (1%). Alloantibody against c had the highest incidence

(28.57%) followed by E (21.42%). Five out of 28 (17.85%) patients had developed antibodies against both c and E. Conclusion. Data from this study demonstrate that the RBC alloantibody and autoantibody development rates are significant in our region. Thus, pretransfusion antibody screening needs to be initiated in eastern India in order to ensure safe transfusion practice.

Total 500 thalassemic patients were evaluated in the age ranging from 2 to 40 years. The inclusion criteria were patients who were dependent on transfusion and had a history of blood transfusion at least once in every month. The exclusion criteria were female patients who were transfusion dependent but had a history of Rh isoimmunization or fetomaternal haemorrhage. Clinical and transfusion records were analyzed in all patients for presence of alloimmunization/autoimmunization with antibody specificity among different age groups and different types of thalassemic (beta thalassemia major and E-beta thalassemia) patients. All thalassemia patients were transfused according to institutional transfusion policy to keep target Hb level 9–11.5 g/dL with a transfusion interval of 2–4 weeks (median interval of 3 weeks). As per transfusion strategy of our institute, all thalassemia patients were given ABO and Rh(D) matched packed red cells after compatibility testing by gel card technique in the AHG phase (type and crossmatch policy). In case patients were detected to have alloantibodies, those patients received ABO & Rh(D) matched particular antigen negative (against which they had alloantibody) compatible units for transfusion. Patients who had developed autoantibodies received transfusion with “best matched” units.