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DETECTION AND IDENTIFICATION OF ALLO-ANTIBODIES IN MULTI-TRANSFUSED THALASSEMIA PATIENTS

Immunohaematology

Dr. Parul Prajapati Senior Resident in Immunohematology and Blood Transfusion, Baroda.

Dr. Milind Dighe Head of the Department of Immunohematology and Blood Transfusion, SSG Hospital, Baroda.

Dr. Farzana Kothari* Associate Professor in Immunohematology and Blood Transfusion, SSG Hospital, Baroda. *Corresponding Author

ABSTRACT

Introduction: Thalassemia is a heterogeneous group of genetic disorders of hemoglobin synthesis of globin chains. In India, it is estimated that nearly 8000 – 10000 new thalassemics are born every year. Blood transfusion is life saving for thalassemia patients, it may be associated with some complications such as iron overload , platelet and RBCs allo-immunization. Therefore, screening for unexpected antibodies should be a part of all pretransfusion testing.

Aim: Main aim is that to detect and identify allo-antibody and corresponding antigen negative blood units for transfusion.

Methods: The Study was carried out on 100 multi-transfused patients with Thalassemia registered at SSGH, Baroda.

Results: 05 out of the 100 patients developed allo-antibodies to any of the red cell antigens.

Conclusions: This study will help to minimize the antibody mediated destruction of transfused red cells & Less transfusions reduces the psychological and financial burden on the family.

KEYWORDS

Thalassemia, Allo-Immunization.

INTRODUCTION

Thalassemia is a heterogeneous group of genetic disorders of hemoglobin synthesis of globin chains. In India, it is estimated that nearly 8000 – 10000 new thalassemics (homozygous) are born every year and beta thalassemia gene is found more commonly in Punjabis , sindhis, Bengalis, and gujaratis. The conventional treatment of beta thalassemia major is based on regular blood transfusion from early childhood. Although blood transfusion is life saving for thalassemia patients , it may be associated with some complications such as iron overload , platelet and RBCs allo immunization. Therefore, screening for unexpected antibodies should be a part of all pretransfusion testing, with antibody identification in the event of positive result. Thalassemia patients enrolled for regular transfusion in our hospital belong mainly to Gujarat that lies in the thalassemic zone. This study was therefore designed to find out the frequency of alloantibodies involved to red cell antigens and the factors that might be contribute to their development, so that present transfusion policies can be reviewed.

AIM

- To prevent allo-immunization to red cell antigen that causes immunological transfusion reaction and delayed transfusion reaction.
- Main aim is that to detect and identify allo-antibody and corresponding antigen negative blood units for transfusion is recommended.

METHODS:

The Study will be carried out on minimum 100 multiply transfused patients with Thalassemia registered in thalassemia society at baroda during November 2017 to November 2018. Clinical and transfusion records of all the patients will be examined for age of patients, age at intiation of transfusion therapy, total no of blood unit transfused and transfusion interval and history of any adverse transfusion reaction.

A volume of 2ml blood will be drawn in to and ethylene diamine tereaacetate containing tube and plain tube to obtain serum and red cells. Alloantibody screening and identification will be done by Indirect coombs test, 3 cell panel, and 11 cell panel respectively by conventional tube method or microcolumn agglutination system (Bio-rad gel cards).

RESULTS:

- This study was conducted on 100 registered thalassemia major patients for the presence of allo-antibodies to red cell antigens.
- 66 patients were males and 34 of them were females.
- Majority of the study population were between 6-25 years of age.
- Most of the patients had their transfusion once every 30 days.
- Life long red blood transfusion remains the main treatment for β thalassemia major patients.Five out of the 100 patients developed allo-antibodies to any of the red cell antigens.
- This is may be due to Homogenicty of populationand luecodepleted red cell transfusion.
- Regular screening for development of alloantibodies in multiply transfused thalassemia patients should be done every yearly.
- Alloimmunization to red cell antigens is one of the most important immunological transfusion reaction and causes delayed type of transfusion reaction.

CONCLUSIONS:

- With the screening and identification technique, the alloantibodies should be identified and patients should be given corresponding antigen negative donor unit.
- This will help to minimize the antibody mediated destruction of transfused red cells. Ultimately, the desired effect of transfusion to the patient may result in reduction of transfusion needs for the patients.

Less number of transfusions reduces the psychological and financial burden on the family and will increase the compliance of patient.