Alloimmunization and Erythrocyte Autoimmunization in Transfusion-dependent Egyptian Thalassemic Patients

Saied, Dalia A. MD*; Kaddah, Ahmed M. MD*; Badr Eldin, Reem M. MD*; Mohaseb, Safaa S. MD†
[1] Cairo University
Giza, Egypt

Abstract

Background: Alloimmunization to red blood cells' (RBCs) antigens and formation of autoantibodies against RBCs is a frequent complication among immunocompetent transfusion-dependent patients. Autoantibodies can result in clinical hemolysis and difficulty in cross-matching blood. The objective of this study was to evaluate the presence of alloantibodies and autoantibodies in regularly transfused β-thalassemic patients and the factors influencing the development of alloantibodies.

Materials and Methods: The clinical and transfusion records of 95 Egyptian β-thalassemic patients, with a mean age of 17.07 years, presenting to the National Blood Transfusion Centre for regular blood transfusion were evaluated for alloimmunization and antibody formation.

Results: Alloantibodies were encountered in 27 patients (28.4%). The most frequent alloantibodies encountered were anti-Kell (23.6%) and anti-E (23.6%). Patients with blood group O were the highest in developing antibodies (37.9%). Patients with blood phenotypes R2r Kell negative developed more alloantibodies. Autoantibodies were encountered in only 1 patient.

Conclusions: Alloimmunization to RBCs' antigens is a frequent finding among Egyptian transfusion-dependent thalassemic patients, with the majority of patients being transfused with blood matched for ABO and D antigens only. Absence of phenotypically matched donors, except for a limited number of patients, may have contributed to this problem.

***Keywords**: Force & Energy; Curvature, Calculus; Mathematical Analysis; Nonlinear Theories*

Published In: Journal of Pediatric Hematology/Oncology: August 2011 - Volume 33 - Issue 6 - p 409–414