ABSTRACT

DETECTION OF RED CELL ALLOANTIBODY AMONG THE BLOOD TRANSFUSION RECIPIENTS

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Background: Alloantibodies formation against red blood cell antigens is the most common complication of transfusion therapy especially in multiple transfusions and women’s negative blood group. Most blood transfusions have done based on cross-matching only. Limited data are available on the frequency of immunization case among patients in Jaipur. Aim: To determine the frequency of red cell alloantibodies in multiple blood transfusions, identify of common alloantibody, reduce complications of blood transfusions, improving the safety of blood transfusions and management and treatment of women having alloantibodies. Materials and Methods: A total of 263 samples were collected from blood transfusions recipient’s patients in NIMS and SDM Hospital. Lab tests have done by (BioVue cassettes based on Column Agglutination Technology) in Blood Bank - SDM Hospital includes: ABO, Rh grouping, Du antigen testing, Direct & Indirect Coomb’s Test (DCT&ICT), Antibody screening 3 cell panel (Ortho BioVue AHG Polyspecific Cassettes), antibody identification using 11 cells panel (Ortho Resolve Panel). Results: Out of 263 patients 127 (48.3%) were males and 136 (51.7%) females. The prevalence of alloimmunization was 18.3% and the most alloantibody frequent case combination was Anti-M (18.7%), E (12.5%), D (12.5%), C (10.3%), c (6.2%), e (4.2%), N (6.2%), Fya (4.2%), Lea (4.2%), Leb (4.2%), K (2.1%), Jka (2.1%), Jkb (2.1%), P1 (2.1%). Some cases were have dual Anti-E+ Fyb (2.1%), Fyb+S (2.1%) and Anti-D+C (2.1%) while one patient was have triple alloantibodies Anti-C+E+K (2.1%). All alloantibodies were IgG class except Anti-M was IgG & IgM. Female and male immunized ratio was (2.1:1). The most common blood group among our patients was O positive which is detected in 16 patients (33.4%). Conclusion: Many factors may have contributed to the high immunized ratio observed in this study includes heterogeneity of the population living in Jaipur, lack of better-matched donors for those patients, didn’t use of leukodepleted blood. They have to do antibody screening and identification to avoid transfusion reactions and development new alloantibody; at least antigens detection on RBCs of donor especially (Rh and Kell antigens).

Key words: - Alloimmunization; Multiple Transfusions; Blood Grouping; Blood Bank.