Abstract

AIM: The aim of this study was to investigate the influence of subclasses to IgG anti-D on the intensity of hemolytic disease of fetus and newborn (HDFN) at 45 fetuses/newborns with symptoms of mild and severe HDFN in Republic of Macedonia.

MATERIAL AND METHODS: In retrospective and prospective studies, in a period of 10 years, from 2004 to 2014, there have been immunohemathology tests performed on 22 009 samples on serums of pregnant women.

RESULTS: At 37.78% of the total number of tested patients, IgG1 and IgG3 was the reason for severe HDFN. At 17.77% of the total number of tested patients, which had only IgG1detected, was the reason for serious intensity of HDFN. The correlation of the titer to anti-D antibodies in the mother's serum and the intensity of HDFN were researched in 48 newborns. The titers between 1:8 and 1:32 resulted in 3 cases of HDFN with symptoms of severe disease and in 4 cases there were no signs of HDFN. At 12 women that had a titre between 1:32 and 1:512, five of the newborns developed severe HDFN, and seven had symptoms of mild and weak intensity form. In 3 cases the titer was higher than 512, and out of them one newborn had weak symptoms of HDFN, one developed severe HDFN and one ended with foetal death. Only in one case the titer reached a value higher than 1000, and it ended with a fetal death.

CONCLUSIONS: The titers of the pregnant women serum those are lower than 32 and those higher than 1000 can well predict HDFN. The titers of anti-D antibodies between 64 and 512 have no exact predictive value. IgG1 and IgG3 subclasses of anti-D have no predictive value by themselves, and cannot foresee the outcome of HDFN. The research study results suggest that IgG1 and IgG3 should be included in a multi – parameter protocol for evaluation of the HDFN intensity. They can give a real assessment of the expected HDFN intensity in combination with the titer hight and the significance of the antibodies.

Abstract: Quality of healthcare is one of the most important issues in all healthcare systems worldwide. Still, many studies confirm the fact that healthcare is not as safe as it should be. Accreditation as organized process has positive impact on the quality of health services, confirmed in many health systems in Europe and worldwide. The aim of this article is to evaluate accreditation, ISO standards and European Directives and to estimate which one is the most suitable for external control and for quality improvement in blood banks. Blood transfusion services in R. Macedonia are established 71 years ago. Ensuring that the patient will receive a blood product that is safe and will improve the health outcome is the main objective of the institution.

Blood banks with its specificity, have to follow general quality standards, but also a regulations that are specially created for blood banks. The accreditation of healthcare organizations in R. Macedonia is still at the early phase of its implementation. Therefore, additional research is needed to evaluate the impact that

Abstract

BACKGROUND: Red blood cell (RBC) alloimmunization is still an actual problem in our transfusion practice. In 2011, in addition to the regular ABO/D blood group typing, phenotyping for Rh (C, c, E, e) and Kell antigens was introduced for blood donors and patients undergoing blood transfusion. Our aim was to evaluate the impact of the extended RBC typing and donor/recipient matching on the incidence of RBC alloimmunization.

METHODS: A retrospective comparative study was conducted by reviewing RBC request records for abou 36,000 patients transfused with RBC in the period from 2013 to 2015 in comparison to the similar study conducte on 47,000 transfused patients in the period from 2005 to 2008. Pre-transfusion serologic testing data we retrieved for analysis. Blood samples with positive antibody screening and positive cross-match were furth subjected to antibody identification. All the tests were performed using column agglutination technique (CAT) w ID-cards and reagents from DiaMed in both studies.

RESULTS: Irregular RBC alloantibodies were detected in 116 (0.32%) out of 36,000 transfused patients. Multi transfusions (15.8 units/patient) were given to 450 patients from which 79 (17.5%) had RBC allontibodies. T incidence of RBC alloimmunisation in the rest of the 35,550 transfused patients from which 37 had R alloantibodies was 0.10%. A total of 117 alloantibodies were identified in 96 out of the 116 patients with irreg RBC antibodies. Their specificity was as fallows: anti-E (25.6%), -C (6.0%), -c (8.5%), -e (0.85%), -C^w (5.1% (12.8%), -Fy^a (10.2%), -Fy^b (2.5%), -Jk^a (7.7%), - Jk^b (2.5%), -M (9.4%), -S (1.7%), -s (0.85%), -Lu^a (1.7%), 3.4%) and anti- Le^b (0.85%). Multiple antibodies were identified in 22 of the transfused patients out of whic 68.2%) received multiple transfusions. Anti-E was the most common antibody found in more of the 50% o multiple antibody cases.

ONCLUSIONS: The overall incidence of RBC alloimmunization in transfused patients decreased from 0 hich was the estimated incidence for the period before the introduction of the extended RBC typing (2005- 0.32% (2013-2015). This is due to the decreased incidence of RBC alloimmunization in the multiply trans tients from 33.9% to 17.5% respectively. The current frequency of anti-E (25.6%) and -K (12.8%) antibo nsfused patients are significantly lower than their previous estimated frequencies of 30.4% and pectively as well as the overall frequency of RBC antibodies to Rh+Kell antigens which decreased from 53.8%. Extended donor-recipient matching for C, c, E, e and Kell antigens has proved a beneficial effect dence of RBC alloimmunization in multiply transfused patients.