

STUDIES ON DETECTION OF ANTI-ERYTHROCYTE IMMUNIZATION IN PATIENTS IN THE CLINIC OF CARDIOSURGERY

Nikolai Andreev¹, Fani Martinova²

¹ *Department of Transfusion Hematology, University Hospital "St. Anna", Sofia, Bulgaria*

² *Laboratory of Transfusion Hematology, University Hospital for Emergency Medicine "N. I. Pirogov", Sofia, Bulgaria*

Aim: A studies were performed for a period of six years to establish the presence or absence of anti-erythrocyte antibodies in patients from a cardiac surgery clinic at University Hospital "St. Anna", Sofia, and to establish their specificity, providing compatible blood components for extracorporeal circulation.

Material and methods: The standard immune-hematological methods were used to detect anti-erythrocyte antibodies in the patients' plasma: enzyme method (EM), indirect antiglobulin test (IAGT), direct antiglobulin test (DAGT). Gel cards for column identification and the corresponding equipment for them were used.

Results: A total of 2018 patients were examined. Positive results for the presence of anti-erythrocyte antibodies were found by EM method at 37°C in 104 patients (4.93%), by IAGT in 43 people (2.04%) and by DAGT in 104 patients (94.93%). In the identification of proven anti- erythrocyte antibodies, it was found that the most common antibodies were with anti-E specificity (mean 23.5%), followed by anti-D antibodies (11.8%) and anti-M antibodies (11.8%). The antibodies on the erythrocyte surface were identified by DAGT, with specificity IgG in 86.14% and C3d in 13.86%.

Conclusion: Establishing pre-transfusion erythrocyte alloimmunization/autoimmunization and determining the specificity of anti-erythrocyte antibodies is extremely important to ensure compatible blood (and blood components), especially for the large volumes required in the cardiac surgery.

The implementation of the Medical Standard "Transfusion hematology", as well as of Directive 1214/2016 of the Council of Europe as regards quality system standards and specifications for blood establishments requires obligatory in case of forthcoming transfusion of blood components each patients to be tested for presence of anti-erythrocyte antibodies.