

CHANGES IN THE STRUCTURE OF DONORS AND DONATIONS OF BLOOD AND ITS COMPONENTS IN THE REPUBLIC OF UZBEKISTAN

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Abstract

The blood service is a vital component of healthcare, providing the opportunity to provide high-tech specialized medical care using a unique national resource - donor blood, both in peacetime and in emergency situations. The safety and effectiveness of blood transfusion remains a cornerstone of modern medicine, reflecting the collective efforts of dedicated individuals who generously donate their blood to save the lives of health care workers, researchers and others. The purpose of the blood service is to ensure the quality of transfusion therapy. To achieve this goal, the institution is divided into blood service specialists, i.e. medical workers and public organizations involved in the production, transportation and storage of blood and its components, and specialists clinically applying alternative technologies of allogeneic blood transfusion, and they work together. An important condition for participation in donation is that the donor's health meets certain medical criteria. The problem of donor blood and its components is considered important for the state and is key in the country's health care. The quality and availability of high-tech medical care in peacetime and emergency situations depend on the effective resolution of donation issues at the regional level. A positive attitude of society towards charity and active participation of the population correspond to the goals of the state in the sphere of security and the socio-political sphere - the formation of a healthy generation, a physically and spiritually strong society. Improvement of specialized medical care, primarily in oncology, hematology, cardiac surgery, traumatology, obstetrics and other specialties, causes an increase in the need of medical institutions for blood components, the only source of which are donors. Therefore, donors should lead a healthy lifestyle, give up bad habits and take care of their health.

Purpose of the study. Analysis of changes in the structure of donors and donations of blood and its components in the Republic of Uzbekistan.

Materials and methods. In this study, a retrospective analysis of donors who voluntarily donated blood at the Republican Blood Transfusion Center (RBTC) of the Ministry of Health of the Republic of Uzbekistan (MOH RUz) from 2021 to 2023 was conducted. Statistical analysis was performed using Microsoft Excel-2016 software derived from the Windows-

Vista operating system. The reliability of differences in the compared mean values was assessed using Student's t-test. The difference in results was considered statistically significant at $p \leq 0.05$. Analyses associated with tables (Pearson's chi-square test) and correlation analysis (Spearman's correlation coefficient) were expressed.

Results

In the Republic of Uzbekistan, over the past 3 years, the number of donors has increased by 20.4%, including primary donors - by 23%, repeat donors - by 27.7% ($\chi^2 = 175.3$; $p < 0.01$). In the RCPC, the number of blood donors in 2021-2023 increased by 10.9%, the number of primary donors - by 13.7%, the number of repeat donors - by 8.7% ($\chi^2 = 175.3$; $p < 0.01$).

Changes in the needs of medical organizations of the Republic of Uzbekistan led to an increase in the number of whole blood donations by 26.7% in 2021-2023, and the need for red blood cell mass by 30.5% ($\chi^2=175.3$; $p<0.01$) over the past 3 years. The need for plasma increased by 30%, and for platelets - by 2.8% ($\chi^2=175.3$; $p<0.01$). A decrease in the yield of cryoprecipitate by 19.5% and the yield of albumin by 46.9% ($\chi^2=175.3$; $p<0.01$) was noted. This is due to the fact that albumin is isolated from blood only in Tashkent city and Andijan region, and is not isolated in other regions.

In the RCPC, the number of whole blood donations in 2021–2023 decreased by 25.4%, while the need for red blood cells increased by 27.8% ($p<0.01$). The demand for plasma increased by 24.2%, and for platelets by 81.2%; $p<0.01$), cryoprecipitate extraction was 92.6%; $p<0.01$), and an increase in albumin excretion was observed by 4.4%; $p<0.01$). The isolation of anti-staphylococcal immunoglobulin decreased by 72.8%; $p<0.01$). The isolation of anti-Rhesus immunoglobulin decreased by 78.9%; $p<0.01$).

The predominant motive for Uzbek donors is altruistic assistance to a sick person: the number of paid donations in 2021-2023 decreased by 26.5%. On the contrary, the number of gratuitous donations increased by 23.4% ($\chi^2=5181.7$; odds ratio OR=1.75 (confidence interval from 1.72 to 1.78), $p<0.01$). Thus, gratuitous donations are the basis of donation in our country.

Conclusion

The development of specialized medical care determines the multidirectional need of clinics for blood components. The study of donation rates and the receipt of blood components made it possible to identify trends in the change in clinical medical need for blood transfusion services and to develop national and regional target programs taking into account the population's need for blood transfusion.