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#### ZAMONAVIY TIBBIYOTDAGI ISLOHOTLAR 45. Sharifov Ruslan Bobomurod o'g'li, Abdullayeva Laylo Sayfulla gizi, Ergasheva Dilnura Ulug'bek gizi 188-191 TEXTBOOK ACTIVITIES FOR INCREASING 46. ADAPTING CLASSROOM **INTERACTION** Erkaboyeva Saodatkhon 192-195 47 IMPROVEMENT OF ACTIVATION TECHNOLOGY OF CLAY ADSORBENTS PREPARED FROM LOCAL RAW MATERIALS FOR PARAFFIN PURIFICATION Mamadalieva Sadokat 196-200 PIESA MATNIDAN ROLNING SAXNAVIY SHAKLIGA UTISHDA AKTYORNING 48. IJODIY JARAYONI MUAMMOLARI Qudaybergenov Alibek Amandig uli 201-203 BUYUK SOHIBQIBONNING DAVLAT BOSHQABUVI BOBASIDAGI FIKB-49 MULOHAZALARI Toʻgʻonboyeva Ziyodaxon, Moʻminmirzo Xolmoʻminov 204-207 O'QUVCHILARDA MUSIQIY FIKR VA MUSIQIY IDROKNI HOSIL QILISH 50. SHAKLLARI Xamrayeva Munisa Xikmat gizi 208-213 ЕТУК ТАЪЛИМ ТАЪЛИМ ВА ТАРБИЯ МУШТАРАКЛИГИ 51. Нозим Холикова 214-219 MASOFAVIY ZONDLASH MALUMOTLARINI GEOLOGIK MALUMODLILIGINI 52. **OSHIRISHIRISH** Ochilov Sh.X 220-222 THE LEGAL TERMS FORMED WITH AFFIXES IN THE KARAKALPAK 53. LANGUAGE Allamuratov Nurlibay Esemuratovich 223-225 54. ON THE FREQUENCY OF DETECTION OF SEROLOGICAL MARKERS OF INFECTION WITH HEPATITIS B AND C VIRUSES AMONG BLOOD DONORS LIVING IN UZBEKISTAN

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# ON THE FREQUENCY OF DETECTION OF SEROLOGICAL MARKERS OF INFECTION WITH HEPATITIS B AND C VIRUSES AMONG BLOOD DONORS LIVING IN UZBEKISTAN

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### ABSTRACT

Transfusion of donor blood worldwide on average 0.01-2% of donors are carriers of hepatitis viruses. Therefore, at present, donor blood is examined for the presence of hepatitis viruses before transfusion to the recipient. The risk of infection is increased in individuals requiring repeated blood transfusions or blood products [3,4].

Keywords: bloodborne infection, donor, recipient, blood transfusion.

The purpose of the work is to evaluate the contribution of the blood service of the Republican Blood Transfusion Center of Uzbekistan to the identification of patients with parenteral viral hepatitis B and C.

Ensuring the safe transfusion of blood and its derivatives for the recipient remains a very urgent problem of modern transfusion medicine. Despite the existing achievements in this area, unfortunately, it is still not possible to completely secure blood transfusions for the recipient. The tasks of the Blood Services of all countries of the world without exception include ensuring the safety of donated blood and its components for patients receiving transfusions in clinics. An absolute priority is to ensure infectious safety in relation to bloodborne infections, among which viral hepatitis is the most common.

Diagnosis of hepatitis B and C at the present level is mandatory both in Uzbekistan and abroad. At the same time, it should be emphasized that it is in the Blood Service





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that the most modern diagnostic methods with maximum sensitivity are used. In the past few years, the traditional immunological diagnostics of hepatitis B and C has been supplemented by molecular biological methods — nucleic acid amplification technologies (NAT), which make it possible to detect an infectious agent at an early stage before the formation of immunological markers [5].

## **Material and Methods**

The material of the study was the contingent of donors of the Blood Service of the Republican Blood Transfusion Center for the 6th month of 2022, the data on which were obtained from the reports of the Blood Service.

Studies of blood samples for serological markers of pathogens of transfusiontransmissible infections, including viral hepatitis C and B, are carried out by enzyme-linked immunosorbent assay (ELISA) on Evolis analyzers (Bio-Rad, USA) and by immunochemiluminescence analysis (ICLA) on Architect analyzers 2000 ("Abbott", USA).

### **Results and Discussion**

The total number of donors for 6 months of 2022 was 12044. Of these, 1058 women, 10986 men. Donor age ranged from 20 to 65 years. The number of hepatitis B and C markers detected in the donor contingent of the Blood Service of the Republican Blood Transfusion Center for 6 months of 2022: hepatitis B-70, of which 62 men, 8 women. Hepatitis C-22, of which 13 men, 7 women. Detection of hepatitis B and C markers among donors of the Blood Service of the Republican Blood Transfusion Center for 6 months of 2022 (including hepatitis B virus carriers), %: hepatitis B-0.58%, hepatitis C-0.18%.

Donor blood is tested for the presence of hepatitis B surface antigen using Monolisa HBsAgUltra (Bio-Rad, France) or HBsAg Qualitative Architect (Abbott, USA) test systems. To confirm the results of detection of HBsAg by a neutralization test, an HBsAg-confirmatory test "Bio-Rad" or "Abbott" is used.

Total antibodies to the HBc antigen are determined using Monolisa a-HBcAg test systems (Bio-Rad, France).

Testing of donor blood for hepatitis C antigen/antibodies is carried out using Monolisa HCV Ag-Ab Ultra test systems (Bio-Rad, France) and a-HCV Architect (Abbott, USA); InoLIA immunoblot (Belgium) or Desiscan (France) are used as confirmatory tests.





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#### Conclusion

Thus, the Blood Service is a unique source of information about the state of health of citizens (infection in the first place) who are on the territory of Uzbekistan and consider themselves healthy.

Thanks to the program for universal immunization of the population, we can talk about significant progress, reflected in the statistics: over 11 years (2010-2021), the incidence of acute hepatitis B has been reduced by 23.5 times. But as a result of the analysis of data from the reports of the Blood Service of the Republican Blood Transfusion Center, we can state that the problem of hepatitis B and C remains relevant and requires progressive measures: immunological, diagnostic and therapeutic. All of them can be implemented only in the joint work of medical organizations in various fields of focus. This requires not only high-quality work of specialists, but also well-established communication between medical institutions.

The same can be said about the number of detected hepatitis B and C virus carriers. Donors with clinical or laboratory abnormalities in their condition are not allowed to donate. In this regard, it can also be assumed that those donors in whom markers for this type of hepatitis were found are virus carriers.

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