2022 CANADA CONFERENCE

VOLUME 1
ISSUE 2

E- CONFERENCE SERIES

INTERNATIONAL CONFERENCE ON SCIENTIFIC RESEARCH IN NATURAL AND SOCIAL SCIENCES

NOVEMBER 5TH 2022

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Vol. 1 No. 2 (2022): ICSRNSS

Proceedings of International Conference on Scientific Research in Natural and Social Sciences
Hosted online from Toronto, Canada.
Date: 5th November, 2022
ISSN: XXXX-XXXX **Website:** econferenceseries.com

SYSTEM OF MEASURES TO ENSURE THE SAFETY OF TRANSFUSIONS OF BLOOD COMPONENTS IN THE REPUBLIC OF UZBEKISTAN

Yunusova Hulkar Alisherovna
Researcher Republican Blood Transfusion Center,
Tashkent, Uzbekistan

Saidov A'lonur Bakhtinurovich
Doctor of Medical Sciences
Republican Blood Transfusion Center, Tashkent, Uzbekistan

Ismoilova Zulfiya Abdufattokhovna
Candidate of Medical Sciences
Republican Blood Transfusion Center, Tashkent, Uzbekistan

ABSTRACT

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 that the most modern diagnostic methods with maximum sensitivity are used. Donor blood transfusion worldwide, an average of 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 increases in individuals who need repeated blood transfusions or blood products [3,4].

Keywords: parenteral hepatitis, blood transmissible 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.

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 increases in individuals who need repeated blood transfusions or blood products [2,4].

In the past few years, the traditional immunological diagnosis 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 [5,7].

Material and methods

Donor D., a 25-year-old man, wanted to donate to the Blood Services of the Republican Blood Transfusion Center, during the examination (02/16/2022) he was suspended from donating based on the detection of HBV DNA. In this patient, in the general analysis of blood, deviations from the norm of the content of monocytes and lymphocytes were noted.

Studies of blood samples for serological markers of pathogens of transfusion-transmissible infections, including viral hepatitis C and B, are carried out by polymerase chain reaction (PCR), enzyme-linked immunosorbent assay (ELISA) on Evolis analyzers (Bio-Rad, USA) and immunochemiluminescent analysis (IHLA) on Architect 2000 analyzers (Abbott, USA).

Results and discussion.

The results of the general and biochemical analysis of the blood of the donor D. before donations.

Complete blood count: CP-1.0, ESR 6 mm/hour; Segmented neutrophils - 38.5%; Basophils - 0.0%; Lymphocytes-48%; Monocytes-13%; Eosinophils-0.5%; Hematocrit (HCT) -45%; Hemoglobin (HGB) - 156 g/l; Leukocytes (WBC) - 7.1x 109/l; The average content of hemoglobin in a single erythrocyte (MCH) is 35.3 pg; Mean erythrocyte volume (MCV)-86 microns; Platelets (PLT) - 254x10*9/l; Erythrocytes (RBC) - 5.16x 10 * 12 / l;

Total blood protein-78g/l; total bilirubin - 7.8 µmol/l; ALT-22 U/l; AST-19 U/l;

In the general blood test on the day before donation, the donor with normal values of the main blood parameters showed relative monocytosis and relative lymphocytosis. When testing a mini-pool of 6 samples, which included a sample of donor D., HBV DNA was detected by PCR. Raspulation and examination of the sample in an individual setting showed a low concentration of viral DNA (less than 150 IU / ml).

Conclusion. Thus, the donor was suspected of having primary viral hepatitis B. The donor was suspended from donation. Monitoring of the donor revealed further seroconversion, an increase in viremia, and a clinical picture of acute viral hepatitis B, which required hospitalization of the donor in the infectious diseases department of the hospital. Primary clinical and laboratory research is carried out before the donation of blood and its components, and its results make it possible to prevent donors with deviations from the norm from any indicators of peripheral blood from donating. In addition to routine studies, additional laboratory studies may also be important. Deviations in the leukocyte formula may indicate the onset of an infectious disease caused by a pathogen with a parenteral route of transmission.

This case demonstrates that a slight deviation from the norm in the leukocyte formula may already be the first symptom of a donor's infection with bloodborne infections. At the same time, serum ALT activity was within normal limits. In the described case, the donor donated blood in the early period after infection, without recognizing or ignoring the risk factors.

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.

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.