

Virus markers antibodies detection in umbilical cord blood

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Abstract

In accordance with the Ministry of Health’s Order № 325—“About the developing of cells technologies,” 25 June 2003—20 samples of cord blood were tested at the Stem Cell Bank Pokrovski for the presence of infectious agents (anti-HIV 1 and 2, p24 HIV1, anti-HTLV I and II, anti-HBcorAg, HBsAg, anti-HCV, anti-CMV, anti-Toxoplasma gondii, and RW) using the ELISA method.

We detected none of the listed markers in 29.2% of samples. HBcorAg antibodies were detected in 6.6% of samples, HCV antibodies in 1.6%, CMV antibodies in 62.5%, and T. gondii antibodies in 20% of samples. The absence of the positive detection of HIV antibodies, p24 HIV1 antigen, and HbsAg depends on the isolation of the epidemic cause of mothers infected with HIV and HBV.

We also detected T. pallidum antibodies in 2 cases with negative RW using the ID-PaGIA method. Those patients had a history of treating the disease caused by T. pallidum. HTLV I/II antibodies were not detected in the explored samples. Simultaneous detection of 2, rarer to 3 causative agents have been observed. Simultaneous presence of antibodies have been detected to CMV – 5 cases of 120, anti-HBcorAg and anti-HCV – 1 case of 120. However, T. gondii antibodies were not detected together with HBcorAg, HCV, and T. pallidum antibodies.

Thus, considering that cord blood derived from stem cells can be placed in long-term storage on condition of negative results of testing for the presence of anti-HIV 1 and 2, anti-HTLV I and II, anti-HBcorAg, HbsAg, and anti-HCV, 110 samples from the explored samples were deemed fit for storage and usage.

Keywords: hematopoietic stem cells, umbilical cord blood