C8. PRELIMINARY RESULTS OF MINI-POOL(MP) NAT TESTING OF BLOOD DONATIONS FOR TRANSFUSION TRANSMITTED INFECTIONS(TTI)

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BACKGROUND: Introduction of nucleic acid amplification techniques (NAT) worldwide, as a complement to serological testing, aims at reducing the residual risk of TTI, due to serological window or silent chronic infections. In Romania, blood donation screening for TTI relies on state-of the art serological methods, but the residual risk, although considerably lowered as compared to the moment of the introduction of specific screening, remains well above the level registered in western EU. Local prevalences and incidences and previous occazional detection of viremic seronegative donations point to the need of introducing NAT for screening donations. We report here the results of MP NAT testing on a lot of blood donations as compared to the serological screening .

METHODS: 2496 plasma samples from blood donations collected during september-october 2012 at CTSMB, were sent to LCR-VTS and extracted in 416 MP of 6 donations, for West Nile Virus testing. The remaining extractions were amplified with Arthus HIV, HBV and HCV kits (Qiagen) respectively. Repeat extractions were done from the reactive MP and from the component individual(ID) samples , and the amplifications were performed in the same run. The serologically reactive samples resulted from the current screening of these donations by CTSMB were also refered to LCR-VTS for serological confirmation and viral load quantification.

RESULTS: 18/416 MP tested NAT reactive as compared to 22/2496 serologically reactive reported donations. HIV: One MP was NAT positive (1/2496) containing the only positive donation confirmed by serological testing and ID NAT. HBV:11 positive MP were detected while 12 ID donations tested positive by NAT out of the 13 serologically confirmed.One serologically confirmed donation had a low viral load witch became nondetectable upon dilution in MP and the other was not detectable even by ID NAT. HCV:7 serologically reactive donations were reported;one was a nonspecific reactive and 6 were confirmed by imunoblot, out of witch only 5 were detected by MP and ID NAT; 1 NAT positive MP contained 1NAT positive serologically negative donation, coresponding to a window-period donation from a first time donor.

CONCLUSIONS: The additional detection by NAT of a window-period donation points to the need of introducing NAT as a complementary tool to serological screening of blood donations, supported also by previous findings of viremias among serologically negative repository smples from repeat blood donors who seroconverted between consecutive donations. On the other hand, serologically positive HBV and HCV nonreplicating infections are frequently detected worldwide, especially among blood donors and further investigation is needed to evaluate the extent of this fenonmenon in our donor population. The adequate size of MPs has to be considered based on the distribution of viral loads in seropositive donors and the impact on the blood unit validation process. Further reduction of the residual risk of TTI would occur only through introducing the NAT testing of all donations and improving standards for donor selection.