

FIRST CASE OF HIV WINDOW DONATION IN SWITZERLAND AFTER 8 YEARS OF UNIVERSAL HIV NAT SCREENING

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Objectives: HIV transfusion-associated virus transmission is a rare but dreaded event. About 350'000 donations are annually screened for human-immunodeficiency virus (HIV) in all six screening centers in Switzerland. Since 2009 transcription mediated amplification (TMA) (Procleix TIGRIS[®]/Novartis Diagnostics) in one center and real time RT-PCR (Cobas s201[®]/TaqScreen/Roche) by the other centers are applied. Positive Switzerland. Anti-HIV antibody screening by ELISA testing may fail in early infection because of a diagnostic window-phase of about 21 days. Therefore, blood donations in Switzerland are screened for HIV by nucleic acid test (NAT) since 2002.

Methods: Since 2002, Swiss blood donors were screened by law for HIV infections with NAT screening. From 2002 to 2007, Cobas Amplicor/HIV-1 Ampliscreen/Roche was used by screening findings from molecular and/or antibody screening are confirmed by real time PCR (Abbott RealTime HIV-1 Assay), EIA (MEIA AxSYM, Abbott Diagnostics), p24 antigen test (Genscreen HIV-1 Ag EIA, Bio-Rad Laboratories) and Immunoblot (INNO-LIA HIV1/2 gO, Innogenetics) by the Reference Laboratory of Swiss Blood Transfusion Service SRC.

Results: Since 2002, of around 3'100'000 blood donors, the first donor was found positive for window-HIV infection and will be described hereby. The propositus, who was regular blood donor since years, got a negative HIV-test (antibody/antigen and PCR) at private doctor's office three days before blood donation. The index donation was found HIV RNA positive applying both NAT screening platforms. A HIV viral load of 72 geq/ml was detected by Abbott RealTime HIV-1 Assay. Ten days later a second blood drawing revealed a viral load of 260'000 geq/ml. A p24-Antigen-test was positive. Acute HIV infection was confirmed one month later by positive HIV antibodies by ELISA and Immunoblot and a progression of HIV viral load to 710'000 geq/ml. Based on this single observation, the incidence of HIV positive window donation in Switzerland is estimated of 1: 3'100'000 which corresponds to frequency observed in Central European countries. Given this low event frequency, the overall costs to prevent the transmission of one life-threatening HIV infection to the recipient of blood products adds up to about 53'000'000 SFR (38'000'000 €), provided that in average 1.3 products are manufactured out of one blood donation.

Conclusion: Despite low incidence of HIV infected blood donors in Switzerland, this observation confirms the occurrence of window-HIV infections in the blood donor community, detectable only by most modern NAT screening. Although general NAT screening adds gigantic costs to the health system, the presented case assures effectiveness of current donor screening in Switzerland.