

# TRANSIENT LOW-LEVEL HIV-1 VIREMIA IN A BLOOD DONOR: SPONTANEOUS HIV CLEARANCE OR EXCEPTIONAL ELITE CONTROL

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## Background:

Exceptional Elite Controllers (EEC) are a rare subset of elite controllers. Prior case reports of EEC have described no detectable HIV RNA in plasma using diagnostic nucleic acid tests (NATs) and no detectable intact HIV DNA in a large number of cells from blood or tissue. Few cases have been comprehensively characterized and none described during acute infection.

## Methods:

Plasma samples from a regular blood donor were analysed for HIV RNA and HIV antigen/antibody (Ag/Ab) and western blot (WB) using multiple assays over a 308-day period. Purified CD4<sup>+</sup> T-cells from blood were analysed for cell associated unspliced (CA US) HIV RNA, total and integrated HIV DNA. Intracellular cytokine staining was performed for HIV-specific T-cell responses and ART levels quantified by mass spectrometry. CCR5Δ32 and HLA typing were performed.

## Results:

A 37-year-old, heterosexual, Caucasian male, had a reactive qualitative HIV RNA NAT and non-reactive HIV Ag/Ab at a regular blood donor visit. Three months prior, HIV RNA NAT and HIV Ag/Ab were non-reactive. Low-level HIV-1 RNA was detected using 3 different quantitative NATs from 5 separate specimens collected over 46 days, and subsequently was undetectable from day 91 (4 tests over a 271-day period). Replicate Aptima RNA testing estimated a viral load of 0.55 cp/ml on day 34. Low-level HIV Ag/Ab reactivity developed on day 123. WB was indeterminate (gp160, p24, p17) on days 123, 215 and 308. HIV DNA and CA US HIV RNA were not detected in 1.6 million CD4<sup>+</sup> cells and 1.8 million CD4 cells on days 34 and 272, respectively. HIV-specific T cell responses were not detected. TDF and FTC were not detected in plasma. CD4 T-cells were in the normal range. HLA typing demonstrated HLA-B35:01:01 and wild-type CCR5 genotype.

## Conclusion:

We propose that this case may represent spontaneous HIV clearance or recent infection in an EEC.

**Disclosure of Interest Statement:**

No disclosures to declare.