

## **An elite controller in pregnancy - towards a definition of recovery, though not cure?**

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### **Background:**

An elite controller has been defined as “having persistently undetectable plasma RNA for 15-20 years, with stable CD4 counts, without therapy”. Low/undetectable levels of proviral HIV DNA are also a feature. We describe a case of a 22-year-old woman with evidence of anti-HIV antibodies but no detectable virus.

### **Methods:**

Blood was collected from mother and baby for diagnostic assays.

### **Results:**

An asymptomatic, 22-year-old pregnant Indian woman presenting for routine antenatal screen at 12-weeks gestation was found positive for HIV antibodies (Abbott Architect HIV Ag/Ab Combo). Her CD4 count was 551 cells/ microlitre and HIV RNA was undetectable (< 40 copies/ml, Abbott Real-Time HIV-1 RNA). Her medical history included mild-intermittent asthma and genital warts. Confirmatory testing showed the following positive bands on Western blot (Genelabs, MP Diagnostics HIVBlot 2.2): p24, gp41, gp120, gp160, confirming a positive HIV status. Further supplementary testing demonstrated the presence of anti-HIV antibodies only and no p24 Ag (VIDAS DUO ULTRA HIV5/P24II, Biomerieux) and a proviral HIV DNA assay was negative on whole blood (Roche Amplicor HIV-1 DNA Test v 1.5). Since these results were surprising, we checked her CCR5delta32 status using an in-house assay, which showed that she was wild-type for this allele. Despite the absence of detectable HIV-1 RNA, she received zidovudine, lamivudine and boosted-lopinavir from gestational week 16 until delivery. She delivered a full-term, healthy baby, by Cesarean section and abstained from breast-feeding as advised. There was no evidence of HIV infection in the infant until at least 12 months after delivery, as indicated by HIV-1 RNA and HIV-1 DNA viral load and anti-HIV/p24Ag serological testing. Throughout her pregnancy and beyond, the woman's white cell markers remained within, or exceeded the normal limits.

### **Conclusion:**

This case does not meet the definition of an elite controller quite yet because 15-20 years have not yet passed. Only one convincing case of HIV clearance has been documented - an HIV-1 infected patient who underwent stem-cell transplantation for acute myeloid leukemia from a CCR5delta 32 homozygous donor. Such cases raise interesting questions as to what we might consider as the criteria for defining HIV *recovery* versus *clearance*.