The Berlin patient is presumed to be the only person cured of HIV-infection by hematopoietic stem cell transplantation (HSCT) from a homozygous CCR5-d32 unrelated donor. Attempts to reproduce cure by HSCT have failed because of either viral rebound or death due to the underlying malignancy. We here report a 46y old patient alive, well and undetectable for HIV (RNA/DNA) three years after allogeneic CCR5-d32 HSCT.

Background

- Proviral DNA load: Roche COBAS® AmpliPrep/COBAS® TaqMan® HIV-1 v2.0 assay or the Roche cobas® 6800 system (Roche Diagnostics, Germany) and 1 ml of buffy coat.
- Total DNA extraction: Roche MagNA Pure System; PBMC count (PBMC/µL): content of β-globin (LightCycler® Control Kit DNA, Roche Diagnostics, Germany) in 1 µL of buffy coat eluate. The proviral DNA load was calculated to the final result of log_{10}cop/10^6 PBMCs.
- ddPCR: in duplex mode using the QX200 platform (Bio-Rad) with primers and a probe.
- Proviral DNA load: 1.45 log_{10}cop/10^6PBMC; WB: all anticipated bands could be detected.

Methods

- Diagnosis of HIV-infection in 10/2010; initial treatment TDF/FTC+DRV/r; switch DRV to RAL to avoid interactions with chemotherapy in 03/2011.
- Complete remission (CR) of AML after 2 induction courses (ICE) + 3 consolidation courses (AML-SG07/04).
- 2nd CR: 8.74x10^5/kg unmodified peripheral blood stem cells from a female 10/10 CCR5-d32 donor after conditioning with fludarabine and treosulfan in 02/2013.
- HIV resistance analysis: no significant resistance mutations and the coreceptor usage was predicted as R5-tropic (Sanger sequencing; FPR 44.5%, NGS: 0.14% X at 3.5% FPR; geno2pheno).