Rectal and Seminal HIV-1 RNA Decay in Infected MSM Initiating With DTG/ABC/3TC

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BACKGROUND

Antiretroviral therapy (ART) reduces significantly the risk of HIV-1 transmission.

However, after starting ART, it is not clearly established at what time the protective effect of ART is achieved in reservoirs, e.g. the rectum or semen, which is particularly important in men who have sex with men (MSM).

OBJECTIVE: We carried out this study to quantify HIV-1 RNA decay in rectal mucosa and semen over 64 weeks (64w) of ART-naïve HIV-infected MSM starting dolutegravir+abacavir+lamivudine (DTG/ABC/3TC) regimen.

METHODS

Longitudinal cohort study including ART-naïve HIV-infected MSM.

Rectal mucosal sampling was performed by high-resolution anoscopy (HRA) when possible, or by insertion of swab directly into the rectum.

Seminal plasma was obtained by centrifugation of semen collected at home within 2 hours before.

HIV-1 RNA quantification (COBAS® Ampliprep/Taqman) of rectal mucosa and seminal plasma samples was performed at day 1 of initiating-ART (baseline) and every 4 weeks until w20 (all) and w64 (6 of 12).

RESULTS

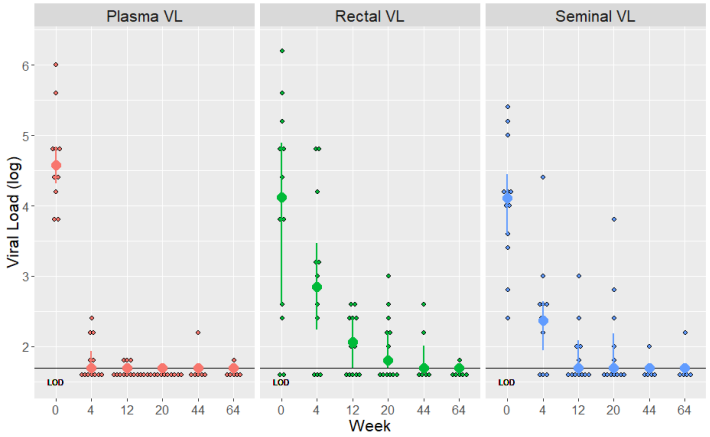
118 plasma, 117 rectal (86-HRA and 31-direct) and 89 seminal samples from 12 MSM, with median (IQR) age 36 (32-42) years and median baseline-CD4+ 449 (400-513) cell/µL, were included. At baseline, HIV-1 RNA was detectable in all plasma, seminal and 10 of 12 rectal samples with median viral load (VL) of 4.58 (4.32-4.84) log_{10} copies/mL, 4.10 (3.59-4.44) log cp/mL and 4.54 (3.82-5.11) log cp/swab, respectively.

Baseline characteristics of the patients

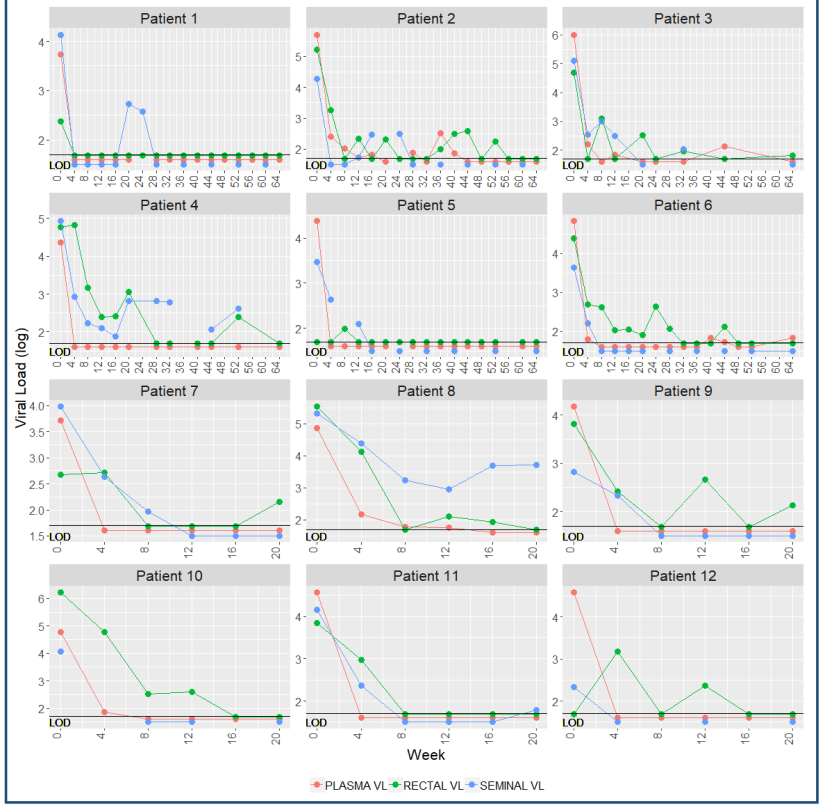
Parameter	12 MSM
Age, median years (IQR)	36 (32-42)
Education Level, no. (%)	
primary education	2 (17%)
secundary education	7 (58%)
universitary education	3 (25%)
Country origin, no. from Spain (%)	10 (83%)
Nadir CD4 (cells/µL), no. (IQR)	422 (396-457)
CD4 (cells/µL), no. (IQR)	449 (400-513)
Plasma HIV viral load (log10, cop/mL), median (IQR)	4.58 (4.32-4.84)
Time since HIV diagnosis to TAR, months (IQR)	13 (4-56)
Coinfections, no. (%)	
Hepatitis C	0
Hepatitis B, HBsAg(-)/anti-HBc(+)	4 (33%)
Syphilis (IgM+IgG)	6 (50%)
Toxic Habits in the last 12 months	
Smoking, no. (%)	7 (58%)
median cigarretes/day (IQR)	6 (5-10)
Alcohol consumption, no. (%)	12 (100%)
≥1 day/week	6 (50%)
Unprotected Intercourse in the last 12 months, no. (%)	5 (42%)
Insertive anal intercourse	3 (25%)
Receptive anal intercourse	4 (33%)

- All patients achieved plasma virologic suppression by w20 (7 of them by w4).
- At w20, HIV-1 RNA was detectable in 5 of 12 seminal and 6 of 12 rectal samples with median VL of 2.50 (2.08-2.73) log cp/mL and 2.24 (2.14-2.46) log cp/swab, respectively. Of them, 3 seminal and 3 rectal samples were from aviremic individuals at w4. Median w20-CD4+ was 678 (532-797) cell/µL.
- At w64, HIV-1 RNA was only detectable in 1 of 6 seminal (VL=2,26 log cp/mL) and 1 of 6 rectal (VL=1,81 log cp/swab) samples.

Median plasma, rectal and seminal HIV viral load of the 12 patients



Monitoring of plasma, rectal and seminal HIV viral load of 12 patients starting with DTG/ABC/3TC regimen



CONCLUSIONS

- Viral decay after initiating DTG/ABC/3TC is slower in rectal mucosa and semen than in plasma.
- Half of the patients achieve undetectable HIV-1 RNA level in secretions at six months, although in some patients, viral shedding persists up to one year.

Acknowledgements

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