Randomized trial of impact of multiple strategies on HIV reservoir: SPARC-7 trial

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Introduction:
- Recognized barriers for HIV eradication among individuals with suppressive antiretroviral therapy (ART) include HIV reservoir, which is not eradicated by ART, and suboptimal regimens or discontinuation/switching or suboptimally adherent or illiterate patients.
- In the past, multiple intervention strategies have been used, such as ART, de-intensification, and without Maraviroc (MVC) or in order to decrease MVC residual replication. 
- Neopterin (NEOPT) in plasma and with MVC was chosen for this study, as it was shown to decrease MVC residual replication, especially in individuals with low CD4+ T cells and low viral load (VL) (Giron et al., 2017).

Objectives:
- To measure the impact of intensified and combined strategies in decreasing viral reservoir and inflammation, as well as the effect of intervention with de-intensification, MVC (alone or not), and without MVC (MVC). Objectives were to reduce MVC residual replication, NEOPT, and to compare the effect of intensified and de-intensification strategies.

Methods:
- Participants: Randomized open-label pivotal phase II clinical trial (clinicaltrials.gov NCT No: 02961829). Study subjects were men of any race who were given the potential opportunity of treatment intensification and de-intensification in an open-label randomised clinical study. Each was randomised to intensified and de-intensification arms. All participants had a confirmed viral load of ≥50 cp/mL, a CD4+ T cells count of ≥200 cells/µL, and a VL of ≥100,000 cp/mL. Patients were randomised to intensified Interventions Groups as follows: Group A: ART intensification and De-intensification, Group B: ART intensification and De-intensification, and Group C: ART intensification and De-intensification and MVC.

Results:
- No significant differences were found for CD4 or CD8 T cells counts or CD4/CD8 ratios during study period.
- No grade 3 or 4 adverse events were observed.

Conclusions:
- A significant reduction of viral DNA as analyzed by a more conservative quantitation analysis was detected only in the group that received proposed intensification treatment: intensification, MVC, de-intensification and MVC dose (D).
- The combination of intensified antiretroviral therapy (ART) + MVC was associated with a decrease in viral load. The group with intensified ART and de-intensification showed a decrease in viral load and inflammation, especially in the compartment of lymphocytes. Inflammation decreased in the intensified randomized clinical trial (Chen et al., 2015).

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Here are a few sections from the full-text article that I've highlighted as being particularly relevant:

**Objectives:**
The objectives of the study were to (1) assess the impact of intensified and combined strategies in decreasing viral reservoir and inflammation, as well as the effect of intervention with de-intensification, MVC (alone or not), and without MVC (MVC). Objectives were to reduce MVC residual replication, NEOPT, and to compare the effect of intensified and de-intensification strategies.

**Methods:**
Participants were randomized to intensified Interventions Groups as follows:

2. Group B: ART intensification and De-intensification.
3. Group C: ART intensification and De-intensification and MVC.

**Results:**
- No significant differences were found for CD4 or CD8 T cells counts or CD4/CD8 ratios during study period.
- No grade 3 or 4 adverse events were observed.

**Conclusions:**
- A significant reduction of viral DNA as analyzed by a more conservative quantitation analysis was detected only in the group that received proposed intensification treatment: intensification, MVC, de-intensification and MVC dose (D).
- The combination of intensified antiretroviral therapy (ART) + MVC was associated with a decrease in viral load. The group with intensified ART and de-intensification showed a decrease in viral load and inflammation, especially in the compartment of lymphocytes. Inflammation decreased in the intensified randomized clinical trial (Chen et al., 2015).

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