IMMUNOLOGICAL AND CYTOKINE CHANGES IN BLOOD AND GUT MUCOSA FROM PHI BY AN EARLY ART

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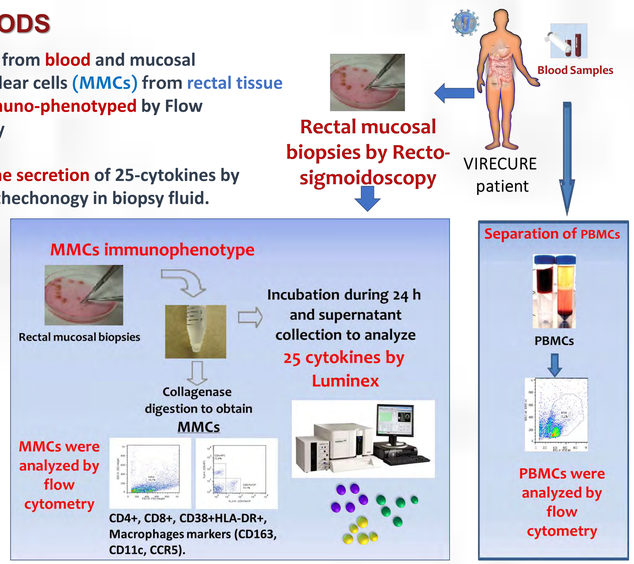
BACKGROUND

The initiation of ART during primary HIV-1 infection (PHI) decreases transmission, contains viral reservoir establishment, prevents damage to immune system and reduces immune activation. The aim of this study was to analyze immunological changes in cell subsets in blood and rectal tissue as well as mucosal cytokine profile after initiating an intensified-5-drug ART regimen during very early PHI.

METHODS

1. PBMCs from blood and mucosal mononuclear cells (MMCs) from rectal tissue were immuno-phenotyped by Flow cytometry

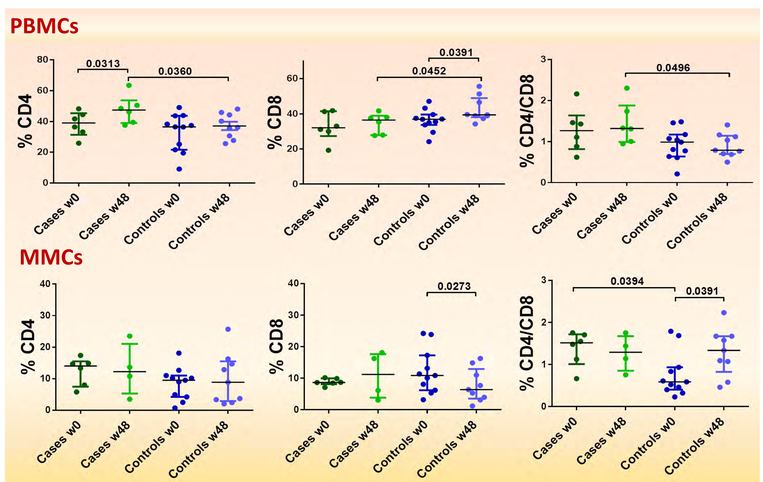
2. Cytokine secretion of 25-cytokines by Luminex thechonogy in biopsy fluid.



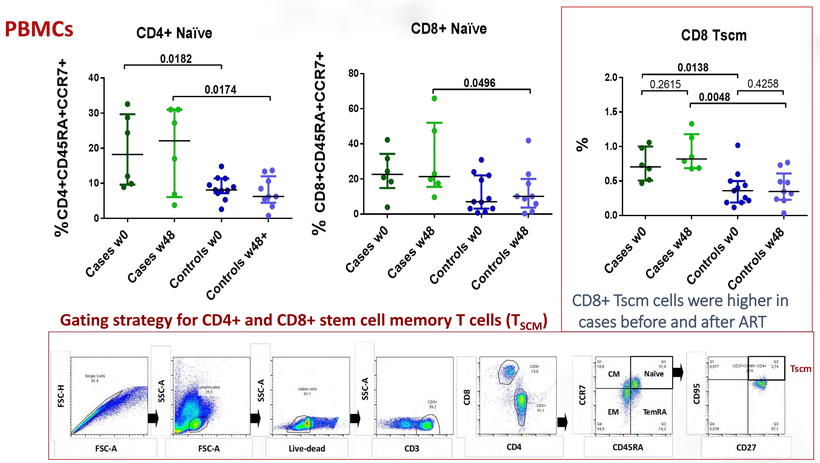
Patients started an intensified ART consisting on abacavir/lamivudine/dolutegravir regimen during 48 weeks plus darunavir-ritonavir and maraviroc the first 12 weeks. Immunological subsets in blood (PBMC) and rectal tissue (MMCs) were compared between **w0** and **w48** and between **cases (Fiebig I-II**, n=6) and **controls (Fiebig III-IV**, n=11) by multi-parametric flow cytometry. The analysis of 25-cytokines on rectal fluid was performed using Luminex assay. Mann Whitney by non-paired or Wilcoxon signed rang test by paired non-parametric groups was used. Clinical Trials NCT02588820.

RESULTS

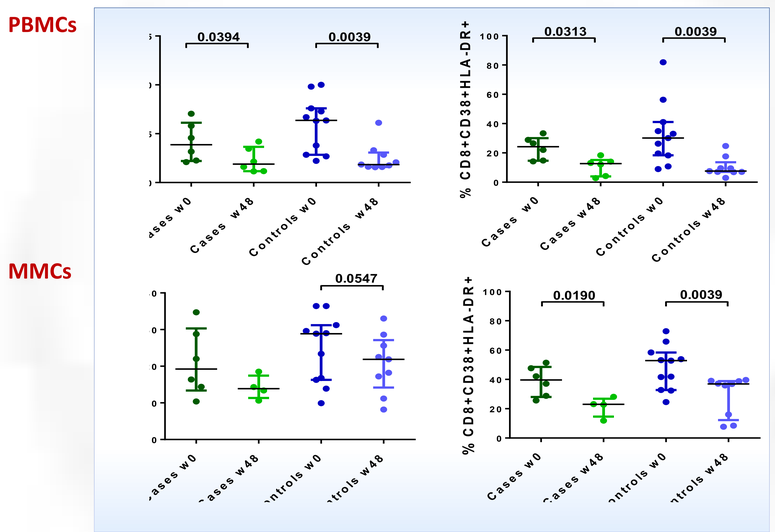
1. At w48, a higher increase of blood CD4+ T cells was observed in cases than in controls. CD4/CD8 ratio was also higher in cases both in:



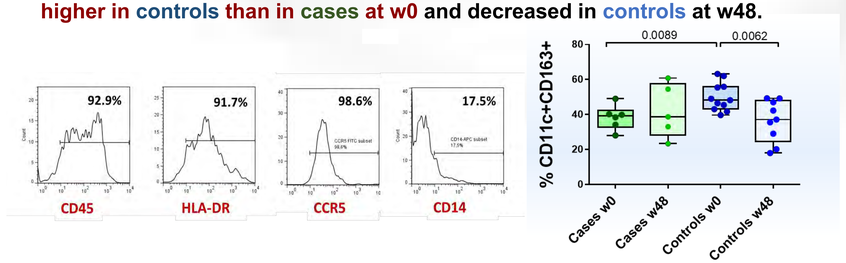
2. Concerning naïve CD4+ and CD8+ T cells, higher percentages were seen in cases with respect to controls even before initiation of ART and were maintained at week 48. Moreover, CD8+ TSCM cells were higher in cases before and after ART.



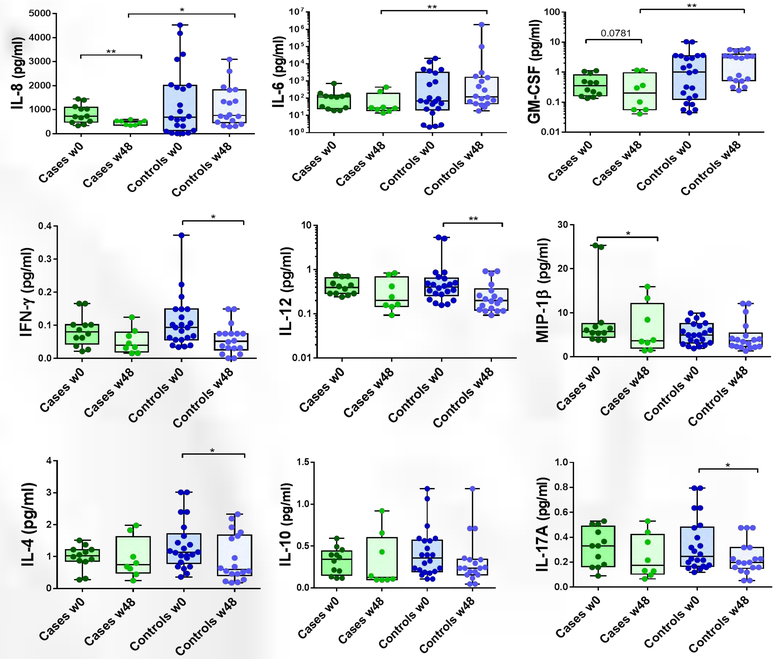
3. ART highly decreased activated CD8+ T cells in both cases and controls from:



4. At mucosal tissue (MMCs), percentage of macrophages (CD11c+ CD163+) was higher in controls than in cases at w0 and decreased in controls at w48.



5. In general, in gut mucosa, a decrease of pro-inflammatory cytokines, such as IL-8, occurred mainly in samples from cases at w48. In addition, levels of Th1 (IFN-γ, IL-12, MIP-1β), Th2 (IL-4, IL-10) and Th17 cytokines and chemokines decreased similarly in both cases and controls at w48.



* = p value <0.05

CONCLUSIONS

An extremely early and intensified ART in PHI patients allowed **good immunological reconstitution**, **decreased immune activation** and **reduced inflammatory profile** in different body compartments.

