## Retrovirology



Poster presentation

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# P16-34. Low frequency of regulatory T cells in peripheral blood from HIV-I+ elite controllers

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### **Background**

A subset of T cells with immunosuppressive properties is the CD4+CD25+FOXP3+ regulatory T cells (Treg). Two main hypotheses explain Tregs in HIV-1 infection: one stating that Tregs prevent chronic immune activation, and hence are beneficial, and another regarding Tregs as harmful because they suppress anti-HIV immune responses. To gain more information on the role of Tregs in chronic HIV-1 infection, we are evaluating the Treg population in chronic HIV-1 infected patients on HAART, treatment naïve viremic patients, and HIV-1 infected Elite Controllers (EC). Additionally, as Tregs are known to inhibit T cell activation, the T cell activation profile is also being tested.

#### **Methods**

PBMCs from 10 HAART patients and 10 ECs were tested. To identify Tregs, PBMCs were subjected to staining and flow cytometry using following antibodies: CD3, CD4, CD25, CD127, and FOXP3. To recognize the activation profile the following antibodies will be used: CD3, CD4, CD69, Ki67, CD38, HLA-DR, and FOXP3.

#### Results

Our data in this ongoing study show that Tregs constitute a smaller fraction of CD4+T cells in ECs than in HAART patients with median 1.46% (range 1.39 – 4.07) and 3.9% (range 1.82 – 9.61), respectively. Furthermore, evaluating data in regards to CD25, FOXP3 and CD127low, another way to identify Tregs, also showed a lower frequency of Tregs in ECs compared with HAART patients, median

1.22% (range 0.07 – 2.70) and 3.10% (range 1.60 – 8.49), respectively.

#### Conclusion

To date, we have found lower frequencies of Tregs in ECs than in HAART patients. Seen in the light of ECs ability to control HIV-1 infection and studies showing polyfunctional CD8+T cell responses in ECs, these data support a harmful role of Tregs in the HIV-1 infected patient, e.g. by suppressing HIV-1 specific CD8+T cell responses.