SCHISTOSOMA SPP ANTIGENS INDUCE T CELL REGULATORY PROFILE IN HTLV-1-INFECTED INDIVIDUALS

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ABSTRACT

Introducton: The HTLV-1 is the causal agent of HTLV-1-associated Myelopathy/Tropical Spastic Paraparesis (HAM/TSP). The immune response in HTLV-1 infection is polarized to the Th1-type, and previous data from our group have demonstrated that the use of *Schistosoma* antigens to cell cultures in HTLV-1 infection resulted in down-modulation of Th1/inflammatory response. **Objective:** To evaluate whether *Schistosoma spp* antigens are able to induce *in vitro* the expression of modulatory molecules in $TCD4^+$ and $TCD8^+$ cells (CD25, CTLA-4 and Foxp3) in HTLV-1-infected individuals. **Methods:** The *Schistosoma* antigens Sm29, ShTSP2 and PIII were added to PBMC cultures and the frequency of $TCD4^+$ and $TCD8^+$ cells expressing CD25, CTLA-4 and Foxp3 were measured using flow cytometry. **Results:** The frequency of $TCD4^+CD25^{High}$ cells increased by the presence of *Schistosoma* antigens (without stimulation = 0.6 ± 2%, stimulated with Sm29 = 1.2 ± 1, ShTsp2 = 0.9 ± 0.5 and PIII = 0.9 ± 0.6%, respectively). The frequency of $TCD4^+CD25^{High}Foxp3^+$ cell and $TCD8^+CD25^{High}Foxp3^+$ cells also increased after the addition of the *Schistosoma* antigens. Moreover, the frequency of $TCD4^+CD25^{High}CTLA\text{-}4^+$ was significantly higher in cultures stimulated with Sm29 (without stimulation = 21 ± 10%, stimulated with Sm29 = 25 ± 12%; $p<0.05$) and the frequency of $TCD8^+CD25^{High}$ also increased by the presence of Sm29 and ShTsp2 to the cultures (without stimulation = 0.5 ± 0.3%, stimulated with Sm29 = 0.7 ± 0.4%, stimulated with ShTsp2 = 0.8 ± 0.5%; $p<0.05$). **Conclusion:** The *Schistosoma spp* antigens used in this study induced a regulatory profile in the $TCD4^+$ and $TCD8^+$ cells from HTLV-1-infected individuals. It might act as an anti-inflammatory factor that could down-modulate the strong immune response induced by HTLV-1. **Financial support-** CNPQ (Universal 479417/2008 3); NIH (R01AI079238A).

Palavras-Chave: *Schistosoma* antigens; HTLV-1; Immunomodulation; T regs cells.