

Strongyloides stercoralis hyperinfection in HTLV-1 patients: A case series with eggs, rhabditiform and filariform larvae and free-living adult female elimination in feces.

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In most individuals, *Strongyloides stercoralis* infection remains quiescent with no significant morbidity. This parasite-host balance can be disrupted under conditions of impaired cellular immunity. High risk groups include patients under massive corticoid therapy, chronic alcoholics and HTLV-1 coinfecting patients. Human T-cell lymphotropic virus type 1 (HTLV-1) represents a significant risk factor for the development of life-threatening strongyloidiasis. Several studies suggested that this may be related to HTLV-I driven alterations in Th2 response. The aim of this study is to describe three cases of patients coinfecting with *S. stercoralis* and HTLV-1 presenting an uncommon clinical feature. Three patients, two male and one female, from the same family (the males were brothers and the female was a cousin), between the ages from 9 to 13, were diagnosed with HTLV-1 infection. All of them were residents of the same house in Baía de Camamu, Bahia, Brazil, and the parents were previously diagnosed with HTLV-1. At the parasitological examination, was observed a large amount of filariform (mean of 2,000 larvae per gram of feces) and rhabditiform larvae (mean of 2,500 larvae per gram of feces). Also, in both oldest male and female were found free-living adult female (mean of 50 parasites per gram of feces). In the oldest male also was possible observe eggs (58 eggs per gram of feces). All patients reported intermittent diarrhea, abdominal pain and difficulty breathing. Also, presented a skin problem. There were four points of visits, from May 2015 to October 2016, in the first point, only one of them were diagnosed with *S. stercoralis*, the other two only were diagnosed in the third point. In the last point, in October 2016, none presented larvae in feces (three months after the last ivermectin treatment). There was performed cytokine measurement (through cytometric beads array – CBA) in the sera of each visit. There was found detectable levels of cytokines IL-2, IL-4, IL-6, IL-10, TNF- α , INF- γ and IL-17. The only cytokine that demonstrated statistically significant difference was IL-17, where the mean were 19.2 pg/mL in the last point, after treatment, a value about 19 times higher before treatment (mean of 1 pg/mL). Several authors have reported that IL-17A has a role in protecting the organism against extracellular bacteria and fungi due to the ability

to recruit neutrophils into the areas of infection. This is the first study that shows a significant alteration in the levels of IL-17 in *S. stercoralis* and HTLV-1 coinfecting patients. An investigation with evaluation of cellular and humoral response is being conducted to better understand these results.

Keywords: *Strongiloides stercoralis*; HTLV-1; case series