EVALUATION OF A MULTIPLEX BEAD ASSAY FOR *Strongyloides stercoralis* DIAGNOSIS USING THE RECOMBINANT ANTIGEN rSs-NIE-1

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Strongyloides stercoralis diagnosis is still a challenge to public health once the parasitological methods are ineffective and the serological tests are limited by several factors, such as the difficulty in the antigen production and the false-positive results. Multiplex assays offer the advantage of testing multiple parameters simultaneously, which could enable to detect several parasitic infections at once. This study aimed to evaluate the sensitivity and specificity of a Multiplex Bead Assay (MBA) in MagPix® platform for *S. stercoralis* diagnosis using a recombinant antigen to detect different specific antibodies isotypes. This study enrolled 330 alcoholic male patients. Parasitological examination was performed on three fecal samples by spontaneous sedimentation, Baermann-Moraes and Agar Plate Culture methods. Sera samples were tested for IgG, IgG1, IgG4, IgA1 and IgE antibodies against *S. stercoralis* recombinant antigen rSs-NIE-1 and IgG antibody against recombinant antigen of *Toxocara canis* excretory–secretory antigen (Tc-CTL-1) and microsomal fraction of *Schistosoma mansoni* adult worms (MAMA) by MBA. In parasitological methods, *S. stercoralis* was the parasite with the highest frequency, 21.2% (70/330). The MBA did not presented reactions for IgA1 or IgE detection. The highest sensitivity was observed in NIE-IgG (95.7%), while the highest specificity was demonstrated in NIE-IgG1(92.3%). However, based on the likelihood ratio (LR), the best diagnostic test was NIE-IgG4 (LR 9.96). Possible cross-reactions were observed in all isotypes, mainly in NIE-IgG, where there was a positivity of 14.5% (10/69) and 58.8% (10/17) in patients with high levels of antibodies for *S. mansoni* (MAMA) and *Toxocara* species (Tc-CTL-1) without *S. stercoralis* larvae in the feces, respectively. This study demonstrates that the MBA can be used as an alternative in *S. stercoralis* diagnosis, particularly for detection of IgG4-specific antibodies.

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