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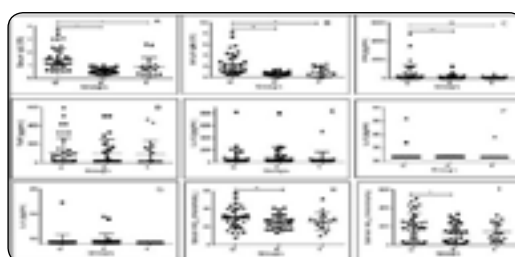
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## Evaluation of immune response markers in sera of children infected with *Giardia duodenalis* AI and AII sub-assemblages

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In this study, we evaluated serum markers of immune responses in children infected with *G. duodenalis* and compared them with the characterized parasite molecular isolates. The reactivity indexes of anti-*Giardia* IgG ( $1.503 \pm 0.819$ ) and IgA ( $2.308 \pm 1.935$ ) antibodies were significantly higher ( $P < 0.001$ ) in *Giardia*-infected than in non-infected children. There were also statistically significantly higher serum levels ( $P < 0.05$ ) of interferon gamma (IFN- $\gamma$ ;  $393.10 \pm 983.90$  pg/mL) as well as serum ( $30.03 \pm 10.92$   $\mu$ mol/L) and saliva nitrogen oxides (NOx;  $192.4 \pm 151.2$   $\mu$ mol/L) in children infected with *G. duodenalis* compared to the group of non-parasitized children ( $127.4 \pm 274.30$  pg/mL;  $25.82 \pm 7.74$   $\mu$ mol/L and  $122.5 \pm 105.90$   $\mu$ mol/L, respectively). Regarding the genetic variants of *G. duodenalis* and the immune response profiles, no differences were observed in terms of antibody reactivity or levels of serum cytokine and NOx among children infected with AI or AII sub-assemblages. The elevated levels of IFN- $\gamma$  and NOx strengthen that *G. duodenalis* intestinal infection in humans induces a cellular immune response detectable at the systemic level. Moreover, no significant differences in the antibody reactivity profile or the cytokine and NOx production in the sera of children infected with AI or AII *G. duodenalis* variants were observed, suggesting that the immune response against the protozoan is not sub-assemblage specific.



**Figure 1** - IgG (A) and IgA (B) anti-*Giardia* reactivities and levels of cytokines IFN- $\gamma$  (C), TNF (D), IL-10 (E), IL-5 (F), and IL-6 (G) and NOx (H) seric and salivar NOx (I) in 39 children infected with *G. duodenalis* (G), 26 negative for enteroparasites (N) and 18 infected with other intestinal protozoa (P). \* $P < 0.001$ ; \*\* $P < 0.05$  (Mann Whitney test). Bars indicate mean  $\pm$  standard deviation

### Biography

Dr. Marcia Teixeira has graduation in Pharmacy from the Federal University of Bahia, Brazil, a master's degree and a PhD in Cell and Molecular Biology from Instituto Oswaldo Cruz – FIOCRUZ, Brazil. She is currently an Associate Professor at the Faculty of Pharmacy of the Federal University of Bahia and coordinator of the Laboratory of Clinical and Toxicological Analysis of the Faculty of Pharmacy. She has experience in Parasitology and Immunology, working mainly in the following subjects: *Giardia duodenalis*, *Cryptosporidium* and *Strongyloides stercoralis*, with emphasis on parasitological, immunological and molecular diagnosis, immunity and molecular epidemiology of parasites.

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