

Neurotropic Parasite *Toxoplasma gondii* and Immunosuppressed Patients

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Letter to Editor

Dear Editor,

Toxoplasmosis is an anthrozoosis caused by the protozoan *Toxoplasma gondii*, an obligate intracellular parasite belonging to the phylum Apicomplexa. It presents a cosmopolitan geographic distribution, with high rates of infection in humans; capable of infecting nucleated cells from a wide variety of hosts. Toxoplasmosis is one of the most common opportunistic infections affecting HIV - positive patients; being the neurotoxoplasmosis, the most prevalent brain focal lesion in these patients. In addition, patients with low CD4+ T-cell counts are at high risk of developing life-threatening reactivated cerebral toxoplasmosis.

Three clonal genetic lineages were initially recognized; these are known as Type I, Type II and Type III, and they are predominant in Western Europe and the United States. However, subsequent studies involving isolates obtained from other regions, including Central and South America, showed that *T. gondii* displays a high percentage of atypical or recombinant genotypes. In this context, our group has studied the pattern of pathogenicity of isolates of parasite from northeastern

Brazil. We genotyped *T. gondii* isolates derived from animals naturally infected, used for human consumption, in the state of Rio Grande do Norte [1]. Additionally, the virulence of the isolates was determined in mice model [2]. The analysis of patterns of pathogenicity and resistance may explain the atypical patterns of toxoplasmosis observed in this region, and also throughout the country. In particular, the interactions and cross-regulation of immune cells with populations of brain cells with alterations in levels of antibodies and cytokines during the toxoplasmosis reactivation. On the other hand, the manipulation of the host by parasite, increasing dopamine metabolism and neurologic changes. Possibly, these mechanisms are strongly associated with higher morbidity in neurotoxoplasmosis in immunosuppressed patients, which remain today only partially understood.

References

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