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#### TITLE

**IMMUNOPATHOLOGICAL CHANGES IN SPINAL NEUROSCHISTOSOMIASIS**

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#### ABSTRACT

**Introduction:** Spinal schistosomiasis is a severe form of *Schistosoma mansoni* infection that affects the central nervous system (CNS). However, underreporting and similarity to other myelopathies may lead to underestimation of the true incidence. Epidemiological data report that approximately 20–30% of patients infected with *S. mansoni* have CNS involvement, and that 5–6% of nontraumatic myelopathies are of schistosomal etiology. The medullary form, more frequent than the cerebral form, is favored by the parasite's spike, which prevents brain infection, but predisposes to spinal cord injury due to progressive necrotizing granulomatous myelitis with the participation of cytokines and deposition of immune complexes, characterizing the immunopathological picture of the disease. **Objective:** The aim of this study is to understand the influence of the immune response on the immunopathological changes in spinal cord neuroschistosomiasis. **Methods:** This study is a descriptive/integrative literature review based on articles published in the following databases: PubMed, Scielo, Google Scholar and LILACS, published between 2014 and 2024. The descriptors: *Schistosoma mansoni*, neuroschistosomiasis, myeloradiculopathy, transverse myelitis, immunopathogenesis, were confirmed through the descriptors in science and health (DeCS). Articles that were outside the period and did not address the topic were excluded. Of the 34 articles found, 12 were used, according to the inclusion criteria. **Results:** The pathogenesis of spinal neuroschistosomiasis is associated with the eggs deposition in the spinal nervous tissue. The most common neurological manifestation is myelopathy, which includes myeloradiculopathy and transverse myelitis. The main route of arrival of the eggs is through retrograde flow through Batson's venous plexus, which connects the portal veins to the spinal column. The initial inflammatory process results in the formation of necrotic-exudative granulomas, consisting of epithelioid cells, eosinophils and fibroblasts; these structures are responsible for compression and tissue damage. The persistence of eggs amplifies the immune response mediated by lymphocytes, macrophages and fibroblasts, which varies in intensity according to the egg load and the host's immune response. In the initial phase, a Th1 profile response predominates, which later evolves to Th2. Egg deposition and the consequent mass effect may occur in the conus medullaris and in the nerve roots of the cauda equina, resulting in spinal cord compression and neurological symptoms such as back pain, muscle weakness, paresthesia and sphincter dysfunction. Immunopathological alterations are confirmed by histopathology, the gold standard for diagnosis. **Conclusion:** We conclude that the immune response triggered by spinal neuroschistosomiasis results in significant myelopathy with severe neurological damage. Thus, delay in diagnosis and treatment results in irreversible impacts of the disease.

#### KEYWORDS

*Schistosoma mansoni*; Neuroschistosomiasis; Immunopathogenesis

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