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TITLE

THERAPEUTIC POTENTIAL OF GRANULOCYTE COLONY-STIMULATING FACTOR (G-CSF) ASSOCIATED WITH PRAZIQUANTEL IN THE IMMUNOMODULATION OF HEPATIC FIBROSIS IN MICE WITH SCHISTOSOMIASIS MANSONI

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ABSTRACT

Introduction: Schistosomiasis mansoni is considered a public health problem, as it is responsible for the morbidity and mortality of millions of people every year. One of the issues caused by the disease is hepatic fibrosis, triggered by chronic lesions during S. mansoni infection. Recent studies suggest that stem cell therapy may be associated with the improvement of fibrous tissue. Thus, we propose that stimulation using granulocyte colony-stimulating factor (G-CSF) in combination with praziquantel may improve fibrous tissue in an animal model.
Methods: To evaluate the impact of G-CSF combined with praziquantel (PZQ) in BALB/c mice (CEUA IAM-145/19) with chronic S. mansoni infection, hepatic fibrous tissue quantification was assessed using picrosirius red staining, and inflammatory cytokine levels were measured through CBA assay and sandwich ELISA.
Results: Quantification of fibrous tissue ($p=0.0060$) demonstrated that in untreated animals, the percentage was 6.61%, in animals treated with PZQ, it was 8.03%, and in those treated with both PZQ and G-CSF, it was 9.84%. Pro-inflammatory cytokines (IL-2, TNF-α, IFN-γ, and IL-6), anti-inflammatory cytokines (IL-10 and IL-4), and the regulatory cytokine (TGF-β1) showed no statistically significant differences in the concentrations tested in the assay.
Conclusion: The preliminary results of using G-CSF in combination with praziquantel did not demonstrate the ability to alter the lesion profile caused by chronic S. mansoni infection. We are currently analyzing the gene expression of α-SMA, albumin, collagen, and galectin-3 to assess fibrogenesis markers and liver function, in order to corroborate the results of the morphometric analysis.

KEYWORDS

Praziquantel; G-CSF; Schistosoma mansoni

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