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TITLE

MURINE SCHISTOSOMIASIS IN MUTANT STRAINS WITHOUT MAST CELLS

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ABSTRACT

Introduction: Schistosomiasis presents clinical manifestations in the human host associated with the granulomatous inflammatory reaction to the parasite eggs as a result of the cellular components of the immune system. However, the role of mast cells in the immunopathogenesis of schistosomiasis is poorly understood, evidencing a knowledge gap that can be mitigated with the use of murine models. Objective: To characterize the immunopathology of schistosomiasis in a murine model deficient in mast cells. Methods: The project was submitted and approved at CEUA/FIOCRUZ, under the Protocol n°30/17-5. Mice were divided into two study groups, the Control group with animals containing mast cells and the Deficient group with animals without circulating or tissue mast cells. Feces samples were collected from the animals in the Control and Deficient groups at 50 and 70 days post-infection (dpi) to perform the parasitological examination according to the spontaneous sedimentation method HPJ. On the day of euthanasia, the animals, along with their livers and spleens, were weighed, and samples from these organs were collected for histopathological analysis using H&E staining. Statistical differences were assesed using the chi-squared test with p-values < 0.05. Results: The parasitological results showed higher detection of parasite eggs in the feces of the animals in the Control group. When analyzing the weight and histopathology of the liver and spleen, higher proportions of weight and structural changes and inflammatory response were observed in the Deficient group as a result of the granulomatous inflammatory response. Conclusion: The results demonstrate a difference in the immune response of animals that contain mast cells, highlighting the influence on the development time of the parasite's life cycle from the elimination of eggs in feces and on the granulomatous inflammatory response related to mast cell deficiency. Thus indicating a potential role of mast cells during the pathogenesis of schistosomiasis. Complementary studies are important to investigate this influence of mast cells on the host's immune response to schistosomiasis.

KEYWORDS

Schistosoma mansoni; Schistosomiasis; Immunopathology; Mast Cells; Murine Model

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