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TITLE

IMMUNOPATHOLOGICAL ASPECTS OF CONCOMITANT IMMUNITY IN SWISS WEBSTER MICE INFECTED BY SCHISTOSOMA MANSONI

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ABSTRACT

Concomitant Immunity is a poorly studied phenomenon despite Schistosomiasis being a well-established parasite-host interaction. It is known that resistance to reinfection in S. mansoni hosts results from a protective immune process conferred by this relationship. However, there are still gaps in the complete understanding of this phenomenon, such as which are the main molecules that prevent the full development of a second infection, and how the age of the host, amount of cercarial inoculum, genetics of the host, and the helminth strain influence resistance. This work aims to address the effect of reinfection with inoculum of 200 cercariae subcutaneously in Swiss Webster mice, with an interval of 45 days between infections and their controls. The choice of these parameters about the cercaria inoculum and the non-syngeneic animal model was due to the more faithful reproduction of the human population, as the works described in the literature use more syngeneic murine models. The results described here are preliminary liver and small intestine analyses of histologically processed tissues stained with HE, Giemsa, Masson's Trichromatic, Picrosirius, and Gomori's Reticulin. Reinfected mice, analyzed at 60 dpi, showed many granulomas in the liver, with smaller diameters, compared to the first-infected control groups from the first (60 dpi) and second infection (45 dpi). Many granulomas were distributed along the periphery of the lobules. The reinfected group had many productive granulomas, some containing lymphocytes in the periphery. This area was smaller and exhibited mild hematopoiesis. Intrahepatic branches of the portal vein containing adult worms were dilated with hemorrhage and subendothelial fibrosis, sometimes accompanied by vegetative lesions, which compressed the bile duct due to the mass effect. Eosinophilic content was observed in some hypertrophic hepatic duct epithelial cells. In the intestine, no significant differences were observed among the groups. However, some animals in the reinfection control group (infected once animals at 45 dpi) presented serositis. The cumulative effect of eggs in the liver, resulting from two infections, generating embolization and granulomas on the periphery of the lobules is indicative that portal hypertension can hurry up in cases of reinfection, depending on the inoculum, with worsening of venous lesions, with highlighting phlebitis and endophlebitis.

KEYWORDS

Schistosomiasis; Concomitant Immunity; Mouse Model; Portal Hypertension; Phlebitis

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