



Indicate the format in which you wish to present your work: Poster Oral Presentation

TITLE

LIVER INJURY IN MICE INFECTED BY SCHISTOSOMA MANSONI AND TREATED WITH PHARMACOLOGICAL AGENTS

AUTHORS

Queiroz, L.C.^{1*}; Souza, B.O.L.¹; Araújo, M.E.O.¹; Santos, E.C.C.¹; Santos, R.A.¹; Silva, B.R.B.C.¹; Almeida, B.S.¹; Amaral, G.V.¹; Costa, S.N.O.A.¹; Damasceno, K.A.¹; Oliveira, R.R.¹

AFFILIATIONS

¹ Global Health and Neglected Diseases Research Laboratory, Gonçalo Moniz Institute, Fiocruz, Salvador, Brazil

ABSTRACT

The chronic phase of schistosomiasis is marked by the formation of granulomas to contain *Schistosoma mansoni* eggs, a process aggravated by frequent reinfections that cause unregulated proteolysis and compromise the extracellular matrix. Because praziquantel does not directly affect granulomatous reactions, is not effective at all stages of the parasite cycle, and does not prevent reinfection, there is an urgent need for more effective treatment alternatives. Swiss mice were infected with 75 cercariae subcutaneously and after 45 days, treated for 8 and 15 days with praziquantel, farmx and the combination of treatments. Histological sections of liver were obtained and stained with picosirius red and masson's trichrome. The analysis of extracellular matrix remodeling was performed using ImageJ® software, Fiji version (Versatile tool). Analyses were performed in GraphPad Prism v. 8.2.1, with normality testing to assess data distribution. p-values < 0.05 were considered significant. In the Masson's trichrome analysis, a significant difference was observed in which there was a greater area of the extracellular matrix in the groups treated with praziquantel (p = 0.0079) and association (p = 0.0017) in relation to the positive control group in 8 days of treatments. Regarding the intensity of the marking, there was a significant difference with greater marking in the groups treated with farmx (p=0.0447) and positive control (p=0.9999) in relation to praziquantel in the group treated for 15 days. Picosirius analysis revealed a statistical difference between type 3 collagen in the 8-day positive control compared to the 15-day positive control (p = 0.0449), presenting a median of 3,846,135 µm (1,496,978 – 9,171,444) and 3,269,607 µm (1,782,035 – 4,131,127) respectively. The group treated with praziquantel showed a significantly higher deposition of type 3 collagen after 15 days 2,774,350 µm (2,067 – 5,106; p= 0.0062). Regarding the PS analysis for type 1 collagen, only the group treated with the combination of drugs showed a statistically significant difference (p = 0.0047), in which there was greater deposition of type 1 collagen in the group treated for 15 days 1,745 µm (626,857 - 2,415) in relation to the group treated for 8 days 154,259 µm (93,692 - 462,705): Our results suggest that, although the treatment with praziquantel has some efficacy in killing the worm, the increase in the area and the low intensity of the extracellular matrix suggest that the treatment is not acting directly on the lesion, which reinforces that Praziquantel is not enough to combat granulomatous lesions, even when associated with a drug that can help kill the parasite. And the increase in collagen in the group treated for 15 days may be due to the longer healing time between the two times.

KEYWORDS

Schistosomiasis; Granuloma; Extracellular Matrix

FINANCIAL SUPPORT

FIOCRUZ IGM-002-FIO-20-2-24
Category: P