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TITLE

ACTION OF QUERCETIN IN THE ACUTE PHASE OF MANSONIC SCHISTOSOMIASIS

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ABSTRACT

Schistosomiasis is a neglected and endemic disease in Brazil. The only drug used for treatment is praziquantel, and the lack of other therapeutic options has raised concerns in the scientific community due to the potential emergence of worm resistance, as this drug only acts against the adult worm. Quercetin is a natural polyphenolic flavonoid with low toxicity, possessing antioxidant, anti-inflammatory, and immunomodulatory activities, as well as in vitro antiparasitic action. The objective of this study was to evaluate the schistosomicidal potential of quercetin during the acute phase of mansonic schistosomiasis in a murine model. This was an in vivo experimental study conducted with 39 male albino Swiss Webster mice, experimentally infected with Schistosoma mansoni. Quercetin was administered via gavage at the following doses: 800 mg/kg, 1600 mg/kg, and 2400 mg/kg, with treatments performed according to the infection days: 5th and 15th days post-infection or 10th to 14th days post-infection. The animals were euthanized through deep anesthesia after 60 days of infection, and blood perfusion was performed to recover and count the worms. The recovered worms were subjected to scanning electron microscopy for tegument analysis. The results were expressed as mean and standard deviation. The group treated with quercetin 800 mg/kg (5th and 15th days) had an average of 23 recovered worms; the group treated with quercetin 800 mg/kg (10th to 15th days) also had an average of 23 recovered worms; the group treated with 1600 mg/kg (5th and 15th days) had an average of 27 recovered worms; the group treated with quercetin 1600 mg/kg (10th to 14th days) had an average of 23 recovered worms; and the group treated with quercetin 2400 mg/kg (10th to 14th days) had an average of 33 recovered worms. Although quercetin did not reduce the number of recovered worms in any of the doses and treatment intervals used, scanning electron microscopy revealed some damage to the tegument of the parasites. The results obtained in this study suggest that quercetin, at the doses used, is not capable of destroying S. mansoni in its young stage. In this sense, further in vivo studies are needed to elucidate the action of quercetin at different evolutionary stages of S. mansoni.

KEYWORDS

Schistosomiasis; Schistosoma mansoni; Quercetin

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