COMBINED ANTHELMINTIC AND ANTIBIOTIC TREATMENT REDUCES BACTERIAL TRASNLOCATION IMPACTS IN EXPERIMENTAL TRICHURISIS

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Soil-transmitted helminths (STH) remain a major public health issue, particularly in impoverished regions, despite advancements in healthcare. Approximately 1.5 billion people are infected worldwide, with Brazil reporting a 5.41% prevalence of human trichuriasis. Albendazole has been used for over 40 years in mass drug administration programs to treat STH. However, research on the interaction between intestinal helminths and bacteria remains limited. The recent discoveries about bacterial translocation in association to the growing issue of drug resistance further underscore the need for new treatment strategies. Trichuriasis induces tissue damage, bacterial translocation, and intestinal inflammation. This study aimed to evaluate the combined effects of albendazole and piperacillin-tazobactam during chronic experimental trichuriasis. Swiss Webster mice were infected with 150 embryonated *T. muris* eggs. Thirty-five days post-infection, the mice were treated for 8 days with antibiotics, a single dose of anthelmintics, or both. Four groups were established: Group 1 (antibiotic treatment), Group 2 (anthelmintic treatment), Group 3 (combined treatment), and Group 4 (control, no treatment). Kato-Katz exams were performed on days 0, and 7 of treatment. We analyzed parasitological, cell inflammatory and histopathological parameters of the cecum, as well as the viability of the worms. Egg analysis revealed morphological and morphometric changes in the anthelmintic-only and antibiotic-only groups. Antibiotic treatment significantly reduced epithelial submucosa thickening and inflammatory infiltrate. The combination of anthelmintics and antibiotics led to distinct changes in the interaction between the nematode, bacteria, and host tissue during chronic infection. These results suggest that combined treatment could be an effective approach for treating trichuriasis in humans and animals, although further studies are needed to confirm its potential.

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