

Nitazoxanide effect on the glycolytic pathway of *Taenia crassiceps* cysticerci inoculated in the brain of mice

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Neurocysticercosis (NCC) is the most frequent helminthiasis that afflicts the central nervous system and is caused by the presence of *Taenia solium* cysticerci. Experimental models are usefull tools to understand the host-parasite interaction in human cysticercosis studies. The most used parasite for such studies is *T. crassiceps* cysticercus due to its quick developing cycle, easy maintenance and, mainly, due to its antigenic similarity to *T. solium*. Nitazoxanide (NTZ) is an antiparasitic drug from the nitroiazol group with ample spectre of activity against protozoans, bacteria, nematodes and trematodes. NTZ presents as mode of action the blockage of pyruvate ferredoxine oxidoreductase enzyme (PFOR). The aim of this study was to evaluate the effect of NTZ on the glycolytic pathway of *T. crassiceps* inoculated in the brain of BALB/c mice. The animals were divided into three groups that received one oral dose of physiological solution (NaCl 0.9%) – Group 1; 20 mg/Kg of NTZ – Group 2; 40 mg/Kg of NTZ – Group 3. All animals were treated after 30 days of infection and were euthanized 24h after treatment. Analyses of the cysticerci on high-performance liquid chromatography and espectrophotometry to assess the organic acids related to the glycolytic pathway were performed.The experiment was performed in 6 independent repetitions.The organic acids detected in the treated samples indicated the glycolytic pathway and lactic fermentation. Glucose was only detected in the treated groups while the concentrations of pyruvate and lactate were decrease in the treated groups when compared to the control group. Probably the blockage of a mitochondrial enzyme induced the use of the molecules of the energy reserve in order to enable the parasite survival. It is possible to conclude that the NTZ treatment induce gluconeogenesis in the experimental neurocysticercosis.

Key words: nitazoxanide

Taenia crassiceps

Experimental neurocysticercosis

Energetic metabolism