

## Effects of *Toxoplasma gondii* infection on the myenteric plexus in the ileum of rats

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Toxoplasmosis is a disease caused by the parasite *Toxoplasma gondii*. The transmission occur by the ingestion of water and food contaminated with cysts or oocysts of the parasite. After ingestion, the parasite needs to transpose the gastrointestinal tract barrier, to thereby reach the bloodstream and spread through the host, causing injuries in the intestine. The present study aimed to evaluate quantitatively the alterations in the NADH-diaphorase neurons of myenteric plexus in the ileum of rats infected with 5000 *T. gondii* oocysts. The Committee on Animal Experiments of the State University of Maringá (081/2012) approved this study. For this experiment, there were used ten 60-day-old male Wistar rats (*Rattus norvegicus*). The animals were randomly divided in two groups, the control group (CG, n=5) and the infected group (IG, n=5). The IG received 5000 sporulated oocysts of *T. gondii* (ME-49 strain) and after 30 days the animals were euthanized. The rats ileum were collected, washed and stained with the NADH-diaphorase histochemistry technique. Wholemout preparations with the myenteric plexus were obtained by microdissection. For quantitative analysis, was counted the number of neurons present in 50 400X-magnified fields of both groups. The statistics analysis were performed by the Shapiro-Wilk test demonstrating a normal distribution and the comparison of data was done by the Student t test with  $p < 0.05$ , therefore the results will be expressed by mean  $\pm$  SD. The analysis of the myenteric plexus showed that is no significant alterations in the number of NADH-diaphorase neurons when compared the GC ( $15.58 \pm 8.63$  neurons/field) with the IG ( $15.34 \pm 9.479$  neurons/field). There is relates in literature that did not find alterations in the number this neurons in infections with *T. gondii* and this can be justify by the action of the immune system or the parasite/host relationship (PEREIRA et al., 2010). Furthermore, the alterations can be dependent of the genotype strain, inoculation route and the experimental model (ARAÚJO et al., 2015) since was found a neuronal loss in swines infected with a different *T. gondii* strain (ODORIZZI et al., 2010). In conclusion, the experimental infection with 5000 *T. gondii* oocysts did not caused alterations in the number of NADH-diaphorase neurons in the ileum of rats.

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