HISTOLOGICAL AND HISTOCHEMICAL CHANGES OF *TOXOCARA CANIS* NEMATODE UNDER THE ACTION OF LEVAMISOLE *IN VIVO*

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Summary. The micromorphological and histochemical changes in the structures of *Toxocara canis* under the action of 7.5 mg/kg of levamisole *in vivo* were studied on the 4th, 10th, 15th, 25th and 46th hours post treatment. Six naturally infected puppies were treated with levamisole and the eliminated parasitic nematodes were collected for histological and histochemical studies.

According to our data, under the action of levamisole *in vivo* the distinct micromorphological alterations in *T. canis* body cover tissues were established only during the firsts periods of the investigation (at the 4th, 10th and 15th hour) (Fig. 1). They were expressed as distinct oedema of cuticle, hypodermis and muscle cells. The contractile parts of the muscle cells were especially thick nearby cuticle. They there blended together and formed entire layer beneath hypodermis. 25 and 46 hour onset the treatment the swelling of cuticle was slight. Hypodermis and its cords were swelled too, the toad vacuoles in the basal part of lateral cords disappeared. We established distinct vacuoles of various forms in the muscle cells, which fulfilled their cytoplasmic part at the 25th hour post-treatment. The muscle layer was separated from hypodermis in some regions.

The changes in the enterocytes of *T. canis* during the first period (the 4-10th hour) of experiment were expressed like blending of their fibrils in the apical cytoplasm of these cells. 25 hours onset the treatment their cytoplasm was lightly porous with various-shaped vacuoles. 46 hours onset the treatment we also established the vacuolization and slight swelling in this tissue.

The examination of PAS reaction in *T. canis* tissues under the action of levamisole showed that glycogen deposits' location and reaction remained unchanged in hypodermis, muscle cells and epithelial cells of sexual tubes during all periods of the experiment. A negative PAS reaction in the enterocytes were seen at the 25th hour post-treatment (Fig. 2). At the end of the experiment (the 46th hour) hypodermis, muscle cells and sexual tubes showed not only a positive PAS reaction, but also there were distinct deposits of glycogen in enterocytes (Fig. 3).

In examining the neutral lipids in *T. canis* tissues under the action of levamisole we have noticed that the accumulation of these compounds in hypodermis and muscle cells was slightly more intensive than in controls from the 10th hour to the end of the experiment (the 46th hour). We have noticed fat dystrophy in the enterocytes of *T. canis* during all periods of our examination (from the 4th to 46th hour) (Fig. 4). The lipid accumulation in the epithelial cells of sexual tubes, oocytes and eggs remained unchanged and was similar to that in controls.

Summarizing the alterations of *T. canis* tissues under the action of levamisole we can conclude that levamisole penetrates *T. canis* body cover tissues and causes spastic paralysis and degeneration processes first of all in cuticle, hypodermis and muscle cells.

Keywords: *Toxocara canis*, histology of nematodes, glycogen, neutral lipids, levamisole.