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

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Summary. The micromorphological and histochemical changes in the structures of *Toxocara canis* under the action of 50 mg/kg of nitroskanate in vivo were studied on the 4-10th, 11-15th, 27th, 48th and 51-53rd hours post treatment. Six naturally infected puppies were treated with nitroskanate and the eliminated parasitic nematodes were collected for histological and histochemical studies.

The results show that the anthelmintic applied cause serious changes in the structure of intestinal cells, cuticle, hypodermis, muscle cells and epithelial cells of sexual tubes of *T. canis*. The changes may be described as destructive, degenerative and necrotic processes. First of all (by the 4th hour) the *T. canis* enterocytes have changed. These cells looked swelled. The blending of fibers in the apical cytoplasm of enterocytes was determined during all periods of the investigation. The disruption of microvilli layer was noticed at the 27th hour and at the 48th hour the enterocytes were totally degenerated. The wrinkles of cuticle which were established 27 hour onset the treatment were distinct by the 51-53 hour of the experiment. The nuclei of hypodermis and its cords were vesicle-like. A huge vacuole showed in the central part of nucleus (Fig. 1). The fiber sheet was degenerated and cytoplasm contained small vacuoles. Hypodermis was completely disrupted by the 48th hour under the action of nitroskanate. Cytoplasmic part of muscle cells was seriously damaged yet by the 10th hour onset the treatment. A number of basophilic granules and vacuoles were observed, their nucleus "bag" was disrupted and nucleus looked swollen. Vacuolization of epithelial cells of sexual tubes has been established by the 4th hour of the experiment (Fig. 2). Although *T. canis* tissues were completely disrupted by the 48th hour under the nitroskanate action *in vivo* we have observed very little changes in the tissues of the worms which were found in the intestines of the experimental puppies by the 96th hour onset the treatment. Hence, only the enterocytes were slightly changed as compared with controls.

As it is seen from our data, nitroskanate affected metabolism of glycogen in *T. canis* tissues. First of all, the accumulation of glycogen lowered in *T. canis* enterocytes by the 4-10th hour (Fig. 3) while in hypodermis and muscle cells by the 27th hour. However, by the 48th hour onset the treatment a negative PAS reaction in all *T. canis* tissues was observed.

Neutral lipids in hypodermis, its cords and the epithelial tissue of *T. canis* intestine were distinct 4-10 hours onset the treatment (Fig. 4). Fat dystrophy was ascertained in the all tissues of *T. canis* under the action of nitroskanate.

Basing on our data we maintain that nitroskanate is absorbed in *T. canis* intestine and first of all causes degeneration of it's cells microstructure also changes the glycogen accumulation and causes fat dystrophy in these cells. The distinct degenerative processes in *T. canis* body cover tissues let us presume that this anthelmintic penetrates the cuticle of this nematode too.

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