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TOXOCARIASIS AMONG DOMESTIC DOGS IN VLADIVOSTOK: A LONGITUDINAL STUDY

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Toxocariasis caused by roundworm *Toxocara canis* is a major zoonotic disease with worldwide distribution. Dogs and other *Canidae* are the definitive hosts for *T. canis*, adult worms live in intestine; unembryonated eggs are passed with feces in environment and then third stage larvae within eggshell develop within three to six weeks under appropriate conditions such as warm temperature and high humidity. Puppies are frequently affected *T. canis* due to transmammary and transplacental passage of *T. canis*. High prevalence also registers in free-roaming dogs, which have never received anthelmintic treatment. High worm burden leads to weight loss, vomiting, intestinal obstruction and mortality, especially in young animals.

Humans are the paratenic hosts for *T. canis*, where larvae migrate and encyst in different tissues and organs, caused the so-called larvae migrans syndrome. There are several types of toxocariasis distinguished in humans: ocular toxocariasis, common toxocariasis and neurotoxocariasis. Human can be infected by ingesting fruits and vegetables or soil contaminated by embryonated eggs. Due to the high prevalence rates of *T. canis* among humans and dogs population, it is necessary to investigate the spreading of *T. canis* in different regions and ecosystems in humans and dogs. Moreover, dogs feces contaminated by *T. canis* eggs are major source of environment contamination. The aim of this study is to investigate the prevalence of *T. canis* among dog population in Vladivostok and distinguished risk factors associated with *T. canis* infection.

Totally fecal samples from 782 dogs were investigated during 8 years period of the study (1992–1995, 2014–2017). Feces were examined using flotation method with saturated NaNO₃ and Zinc Sulfate solutions (specific gravity 1.2 g/l). Bivariate logistic regression analysis was used for estimation correlation between *T. canis* prevalence and factors such as dog age, breed, sex and season of the year.

T. canis eggs were found in 58 dogs. Puppies were formed the most part of infected dogs (67.2 %), the *T. canis* prevalence in young dogs (1–3-year-old) was 20.7 %; dogs elder than 3 years – 10.3 % among *Toxocara* positive dogs. There is no significant difference between *T. canis* prevalence in male and female dogs. Two types of mix-infections were registered including *T. canis* + *Uncinaria stenocephala*

(3.4 %), and *T. canis* + *Cystoisospora* spp. (10.3 %). The high prevalence of *T. canis* was registered in autumn (8.7 %) and summer (7.5 %) periods, the prevalence decreased in winter (7.1 %); the lowest prevalence were registered in spring (2.3 %). The bivariate logistic regression analyzes showed that the correlation between *T. canis* prevalence and dog age as well as between *T. canis* prevalence and breed was negative. The male dogs were in 6.1 times higher affected by *T. canis* than females. The significant correlation was found between the prevalence and autumn and winter.

Our data show significant association between *T. canis* infection and male gender, similar results were recorded in dogs population in Northern Greece and India. Contrary to other authors recorded high prevalence of *T. canis* in puppies and young dogs, the results of present study does not show significant correlation.

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