

SUMMARY

Nematodes from *Toxocara* genus, intestinal parasites of carnivores, are of particular interest to parasitologists due to their importance. These parasites are responsible for diseases in both human and animal individuals. In carnivorous animals, depending on their immune status, they can cause intestinal infections or larval migrations into tissues. Many species of animals, including humans, became paratenic hosts by eating *Toxocara* eggs accidentally. In humans, larval forms are the cause of the migrans larva syndrome, causing visceral or ocular toxocariasis. Contamination of the environment with invasive *Toxocara* eggs is a risk factor for humans and animals. Due to the long survival time of invasive eggs, environmental pollution is responsible for the widespread occurrence of this parasitosis. Animal tissues infected with *Toxocara* larvae are the reservoirs of the invasion. They constitute a significant threat to human health when being ingested without proper thermal processing.

The study aimed to analyse selected epidemiological and immunological aspects of *Toxocara* invasion. Specific aims were: 1) to determine the degree of contamination of various environments with *Toxocara* invasive forms and other parasites of carnivorous animals in Lublin; 2) to assess the seroprevalence of anti-*Toxocara*-IgG antibodies against *Toxocara* spp. in humans from S.E. Poland using ELISA and WB techniques. An additional goal was to analyse the immune response in mice artificially infected with various invasive *Toxocara canis* doses using flow cytometry. Histopathological changes in mice during *Toxocara* infection with confirmation of invasive status by PCR methods were also analysed.

Soil analysis revealed the presence of four taxa of nematodes parasitising carnivorous. The overall prevalence and number of parasitic eggs in 100 gram soil samples was: 26.2% *Trichuris* spp. (1-12 eggs), 18.9% Ancylostomatidae (1-7 eggs), 14.1% *Toxocara* spp. (1-9 eggs), 9.2% Capillariidae (1-7). The largest number of eggs was isolated in soil obtained from dog shelters. The number of parasite eggs was the highest in soil from dog shelters. The prevalence of *Toxocara* spp. eggs in dogs' shelters was lower in public places and parks (8.73% and 16.66%, respectively). There was no significant difference between the presence of *Toxocara* eggs in shelters for dogs and public places and parks ($\chi^2 = 4.3$, $df = 2$, $p < 0.05$). Analysis of found *Toxocara* eggs revealed different stages of eggs development. Eggs containing a zygote, a different

