Streszczenie w języku angielskim

Toxocariasis is a neglected zoonosis caused by ascarid larvae of the *Toxocara* genus. Parasites are common in domestic dogs and cats worldwide. Humans acquire the infection by accidental ingestion of infective eggs, which are usually found in the environment contaminated by dog or cat faeces. In humans the larvae do not develop into the adult stage but migrate into various tissues. Four types of toxocariasis are described traditionally: visceral larva migrans, ocular larva migrans, covert toxocariasis, and neurotoxocarosis. Usually, the course of infection is nonspecific. Children report nausea, abdominal pain, fatigue, headaches. Clinical examination is often unremarkable, what makes the diagnosis challenging. The diagnosis of toxocariasis depends on serologic testing: enzyme-linked immunosorbent assay (ELISA) and Western blot (WB) tests. Other laboratory hallmarks of exposure to the parasite include eosinophilia and elevated total immunoglobulin E concentrations. Both are found useful in monitoring treatment outcome of toxocariasis.

In the literature important data on toxocariasis in the north-eastern Poland was lacking. Particularly, environmental contamination of that region with *Toxocara* spp. eggs, seroprevalence, and spectrum of symptoms in children were unknown. Therefore, the aim of the study was to assess the level of environmental contamination with *Toxocara* spp. eggs in Bialystok and the suburbs, evaluate the prevalence of specific anti-*Toxocara* IgG antibodies in children, compare signs and symptoms of toxocariasis in children of different ages, and to identify factors influencing treatment outcome.

The environmental contamination with *Toxocara* spp. eggs was studied in 7 parks and 14 sandboxes in June and then again in September. At each site four soil samples of approximately a 100g were collected. Additionally, 7 areas inhabited by children with recurrent toxocariasis were sampled. A total of 196 soil and sand samples were collected. The contamination of samples was investigated using the centrifugal flotation technique. The seroprevalence of toxocariasis was assessed in 190 children hospitalised in The Medical University of Bialystok Children's Clinical Hospital with symptoms not related to toxocariasis. Signs and symptoms of toxocariasis and the treatment efficacy was evaluated in 66 seropositive children consulted in the Outpatient Clinic of Bialystok Children's Clinical Hospital at the Medical University.

The percentage of positive samples in sandboxes was 39% and 18% in the suburbs, and 36% and 32% in the urban area of Bialystok, in June and September, respectively. Thirty-nine percent of soil samples from parks tested positive in June and 13% in September. We found all seven sites inhabited by children with persistent toxocariasis to be contaminated with *Toxocara* spp. eggs. The total seroprevalence of toxocariasis in asymptomatic children was 4.2%. Children diagnosed with toxocariasis most commonly presented with signs of the covert type of the disease, like abdominal pain, cervical lymphadenopathy, and poor appetite. There were no significant differences in the clinical symptoms between pre-school and school children. A single course of treatment with albendazole was found to be effective in the majority of children (71%). Twenty-nine percent of patients required additional treatment. The analysis of risk factors for treatment failure revealed geophagia and daily contact with dogs to be the only two significant and independent contributors.

The results of the study reveal high environmental contamination levels with *Toxocara* spp. eggs in Bialystok and the suburbs. There is an urgent need to undertake preventive public health measures. However, prevalence of specific anti-*Toxocara* antibodies in pediatric population is relatively low. Toxocariasis should be investigated particularly in children presenting with abdominal pain or lymphadenopathy who live in the environment possibly contaminated with *Toxocara* spp. eggs.