

First report of *Echinococcus multilocularis* in cats in Poland – a monitoring study in cats and dogs from a rural area and animal shelter in a highly endemic region

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Alveolar echinococcosis is a dangerous zoonotic disease caused by larval forms of *Echinococcus multilocularis*. In the life cycle, the principal final host is the red fox. However, there are other species that are definitive hosts also among domesticated carnivorous animals, including dogs and cats. Until now, there were no data concerning this infection in cats in Poland. The aim of this study was to estimate the prevalence of *E. multilocularis* in cats and dogs originating from rural areas and animal shelters in a region characterised by a high prevalence of this tapeworm in red foxes.

MATERIAL AND METHODS. Samples of faeces were collected from 67 cats and 268 dogs from a rural area (villages and animal shelters) of a highly endemic region in southeastern Poland. Samples were examined using nested PCR (*E. multilocularis*), multiplex PCR (*E. multilocularis*, *Taenia* spp.) and PCR (*E. granulosus* s. l.). Additionally, faeces were examined microscopically (flotation). Moreover, intestines from 110 red foxes shot in the investigated area were examined (sedimentation and counting technique).

RESULTS. Positive PCR results for *E. multilocularis* were obtained in 6.0% of cats and 1.5% of dogs. There were no significant differences between groups of animals (from a shelter and with an owner) concerning the prevalence of *E. multilocularis* in both cats and dogs. *Taenia*-specific PCR products were found in 14.9% of cats (*Hydatigera* (*Taenia*) *taeniaeformis*, *Taenia hydatigena*) and 9.7% of dogs (*T. hydatigena*, *T. serialis*, *H. taeniaeformis*, *T. crassiceps*, *T. pisiformis*, *T. ovis*), and *Mesocestoides litteratus* was found in 6.0% of cats and 1.1% of dogs. All samples were negative for *E. granulosus* by PCR. Taking into consideration PCR and flotation results, 43.3% of cats and 27.2% dogs were infected with helminths (26.9% and 11.9%, respectively, were infected with tapeworms). The highly endemic status of investigated area was confirmed by examination of red foxes – 48.2% of examined red foxes were infected with *E. multilocularis*.

CONCLUSIONS. This investigation revealed the presence of *E. multilocularis* in cats for the first time in Poland. This indicates that cats are an additional potential source of infection for people in rural environments in highly endemic areas.