

POLISH PARASITOLOGICAL SOCIETY

**ANNALS OF
PARASITOLOGY**

volume 59 · supplement · 2013



PL ISSN 2299-0631

**The XXIIIth Congress
of the Polish Parasitological
Society**

4-7 September 2013, Szklarska Poręba-Piechowice

ABSTRACTS

The parasite fauna of buzzards (*Buteo* spp.) in the territory of Slovakia – the results of an initial study

Petronela Komorová¹, Ruslan Salamatin^{2,3}, Zuzana Hurníková¹, Ervín Hapl⁴, Ladislav Molnár¹, Miloš Halán¹

¹University of Veterinary Medicine and Pharmacy in Košice, Komenského 73, 041 81 Košice, Slovakia

²Medical Parasitology Department, National Institute of Public Health – National Institute of Hygiene, Warsaw, Poland

³Department of General Biology and Parasitology, Medical University of Warsaw, Poland

⁴RPS, Muranska Dlha Luka 78,050 01 Revuca, Slovakia

Corresponding author: Ruslan Salamatin; e-mail: rsalamatin@gmail.com

Three raptor species from the genus *Buteo* occur in Slovakia – the common buzzard (*Buteo buteo*), rough-legged buzzard (*Buteo lagopus*) and long-legged buzzard (*Buteo rufinus*). The common buzzard is the most common raptor not only in Slovakia but also in Europe. The main diet component of these birds comprises small rodents, especially *Microtus arvalis*.

Our pilot study was focused on the detection of endoparasites in buzzards from Slovakia. We examined 53 common buzzards, 1 rough-legged buzzard and 1 long-legged buzzard. The raptors were subjected to parasitological dissection, the samples of pectoral muscles were examined for trichinellosis using an artificial digestion method and the fecal samples were examined using the standard flotation technique for the presence of parasite eggs and coccidian oocysts.

Parasitological dissection revealed 30% of birds to be infected with parasites from the class Trematoda, in 40% were found specimens of Cestoda, in 6% of individuals acanthocephalan parasites were found. The most common finding was nematode infection (64%).

Some of the identified tapeworms were identified as *Cladotaenia globifera*. In the following study, we will focus on identification of other parasite species.

Coprological examination detected 42.4% prevalence of *Capillaria* spp. Eggs of the genus *Cyathostoma* were found in one long-legged buzzard and intestinal coccidian oocysts were present in 15.2% of samples. Although the raptors are potential hosts of the *Trichinella pseudospiralis* parasite, no positive specimen was found within the present study. These are the first results of an initial study, which indicate that parasite fauna of raptors from the genus *Buteo* is quite diverse. The research is continuing and will contribute to the knowledge of the parasites of Falconiformes and Strigiformes.

The work was supported by a grant of the State Agency VEGA No. 1/0702/12.

A survey of the endoparasites of corvids in Slovakia and a new record of *Spiniglans sharpiloi* tapeworm in the Eurasian magpie (*Pica pica*)

Petronela Komorová¹, Ruslan Salamatin^{2,3}, Zuzana Hurníková¹,
Ladislav Molnár¹

¹University of Veterinary Medicine and Pharmacy in Košice, Komenského 73, 041 81 Košice, Slovakia

²Department of General Biology and Parasitology, Medical University of Warsaw, Poland

³Medical Parasitology Department, National Institute of Public Health – National Institute of Hygiene, Warsaw, Poland

Corresponding author: Zuzana Hurníková; e-mail: hurnikz@saske.sk

The Corvidae (order Passeriformes) belong to the most developed avian group. In Slovakia, they inhabit opened biotopes, in forests, lowlands and in mountains. Animal feed is the main component of their diet, especially during nesting, and particularly in juveniles. Later, in the late summer until winter this is replaced by crops. Within the present study, we investigated the occurrence of endoparasites in 33 corvids belonging to 4 species – 15 common ravens (*Corvus corax*), 11 rooks (*Corvus frugilegus*), 1 carrion crow (*Corvus corone cornix*), and 6 Eurasian magpies (*Pica pica*) found dead in the territory of Slovakia. All specimens were subjected to helminthological autopsy and presence of parasites was determined. A standard flotation technique was used for examination of faeces for the presence of parasite eggs and coccidian oocysts. An artificial digestion method was used for detection of *Trichinella* in pectoral muscle samples. The parasitological autopsy revealed the presence of gastro-intestinal helminths in only one common raven, in small intestine of which was detected one Cestoda specimen and two nematodes. Helminths were neither present in other common ravens nor in the examined rooks. The single carrion crow harboured cestodes in the small intestine. The Eurasian magpie was the most infected species with all six investigated individuals being infected with tapeworms and one of them also with Nematoda species. The tapeworms were identified as *Passerilepis stylosa* (Rudolphi, 1809), *Passerilepis crenata* (Goeze, 1782) from the family Hymenolepididae. In one of examined magpies, the presence of the *Spiniglans sharpiloi* tapeworm from the family Dilepididae described recently by Korniyushin et al. (2009) was identified. Herein we record the first finding of this parasite species in Slovakia. By the use of coprological methods, eight individual birds were found to contain coccidian oocysts which, due to previous freezing of samples, could not be identified to the species level. In two birds the sporadic occurrence of *Capillaria* spp. eggs was recorded, and in one magpie, sporocysts of *Sarcocystis* spp. were diagnosed. This finding is relatively rare, as birds from the family Corvidae were only recently affirmed as potential definite hosts for *Sarcocystis* genus (Gjerde and Dahlgren, 2010). Considering the feeding habits (especially scavenging) of corvids, using an artificial digestion method, the pectoral muscles of all birds were examined for the presence of *Trichinella* larvae. Despite the fact that this avian group may become a potential host for *Trichinella pseudospiralis*, no infected specimens were found.

The work was supported by a grant of the State Agency VEGA No. 1/0702/12.

Autochthonous human *Dirofilaria repens* infections in Poland

**Danuta Cielecka^{1,2}, Hanna Źarnowska-Prymek^{3,4}, Aleksander Masny²,
Ruslan Salamatin^{1,2}, Maria Wesółowska⁵, Katarzyna Mazur-Melewska⁶,
Piotr Borkowski³, Elżbieta Gołąb²**

¹Department of General Biology and Parasitology, Medical University of Warsaw, Poland

²Department of Medical Parasitology, National Institute of Public Health-National Institute of Hygiene, Warsaw, Poland

³Department of Zoonoses and Tropical Diseases, Medical University of Warsaw, Poland

⁴Warsaw's Hospital for Infectious Diseases, Poland

⁵Department of Biology and Medical Parasitology, Wrocław Medical University, Poland

⁶Department of Infectious Diseases and Child Neurology, Poznań University of Medical Sciences, Poland

Corresponding author: Danuta Cielecka; e-mail: dcielecka@gmail.com

Dirofilaria repens Railliet et Henry, 1911 (Nematoda: Onchocercidae) is a subcutaneous parasite of dogs and other carnivorous animals; humans are accidental hosts. The parasite geographic range includes parts of various continents, predominantly the regions with a relatively warm climate. In Europe *D. repens* is the most abundant in the Mediterranean region and Ukraine.

Infection with *D. repens* was diagnosed or confirmed in the MUW and NIP-NIH laboratories between 2007 and 2012 in twenty patients with subcutaneous abnormalities. Parasites were localised in various parts of the body (16), and subconjunctivally (4).

Five of the diagnosed cases were classified as autochthonous. The infection was possibly acquired in the patients' place of residence, i.e. in the Mazovia province (4) and the Greater Poland province (1). None of these patients has ever travelled outside Poland.

From several months to several years prior to the diagnosis, ten out of 20 infected patients travelled to the territories where *D. repens* was endemic: Italy, Greece, Ukraine, South America and South Africa. Therefore it is probable, although impossible to prove, that those patients were infected abroad. In case of the other five patients it was not possible to establish where and when they got infected – it is only known that up to ten years before the diagnosis they had travelled to Hungary and the Czech Republic.

Dog infections reported in central Poland since 2007 and the above-mentioned human autochthonous dirofilariosis cases diagnosed between 2010 and 2012 indicate that *D. repens* infection has become an emerging disease in Poland, as in other European countries.

Monitoring of *D. repens* infections in dogs and mosquitoes is necessary in order to control the epidemiological situation. The increasing number of human dirofilariosis cases indicates that the infection should be considered in differential diagnoses of skin and eye diseases.

Analysis of expression of Toll-like receptor (TLR2 and TLR4) genes in small and large intestines during hymenolepidosis in rats

Danuta Kosik-Bogacka¹, Agnieszka Wojtkowiak-Giera², Agnieszka Kolasa³,
Natalia Łanocha¹, Elżbieta Wandurska-Nowak², Ruslan Salamatin⁴,
Paweł Jagodziński⁵

¹Department of Biology and Medical Parasitology ³Department of Histology and Embryology; Pomeranian Medical University, Powstancow Wielkopolskich 72, 70-111 Szczecin, Poland

²Department of Biology and Medical Parasitology, Poznan University of Medical Sciences, Fredry 10, 61-701 Poznan, Poland,

⁴Department of General Biology and Parasitology, Medical University of Warsaw, Chałubinskiego 5, 02-004 Warsaw, Poland

⁵Department of Biochemistry and Molecular Biology, Poznan University of Medical Sciences, Swiecickiego 6, 60-781 Poznan, Poland

Corresponding author: Danuta Kosik-Bogacka; e-mail: kodan@sci.pam.szczecin.pl

Toll-like receptors in the gastrointestinal tract can influence intestinal homeostasis and play a role in the repair and restitution of the intestinal epithelium following tissue damage. In our previous study on rats in early stages of hymenolepidosis, a statistically significant increase in the level of TLR4 and TLR2 gene expression was observed [1]. Moreover the immunopositive cell number and the intensity of immunohistochemical staining, indicating the presence of TLRs within intestinal epithelial cells, increased over the infection period.

In this study, we determined changes in the expression of toll-like receptor genes TLR 2 and 4 in rats infected with *Hymenolepis diminuta*. In the isolated jejunum of infected rats at 16 days post infection (dpi), mRNA for TLR4 and TLR2 were expressed significantly more strongly in comparison with the uninfected rats. In the colon, significantly increased expression of gene TLR2 was observed from 16 dpi to 40 dpi, and gene TLR4 from 16 dpi to 60 dpi.

Toll-like receptors play a role in maintaining epithelial barrier functions in response to enteric pathogens and parasites. In our study, the alteration of TLR2 and TLR4 expression in the infected rats supports the potential implication of an innate immune system in the pathomechanism of this infection.

References

- [1] Kosik-Bogacka D. I., Wojtkowiak-Giera A., Kolasa A., Salamatin R., Jagodzinski P. P., Wandurska-Nowak E. 2012. *Hymenolepis diminuta*: analysis of the expression of Toll-like receptor genes (TLR2 and TLR4) in the small and large intestines of rats. *Experimental Parasitology* 130: 261-266.

Limitations of serological screening of *Toxoplasma gondii* infection

Grzegorz Karczewski¹, Ruslan Salamatin², Joanna Konieczna-Salamatin³,
Elżbieta Gołąb²

¹Lux Med Medical Center, Warsaw, Poland

²Department of Medical Parasitology, National Institute of Public Health–National Institute of Hygiene, Warsaw, Poland

³Institute of Sociology, University of Warsaw, Warsaw, Poland

Corresponding author: Elżbieta Gołąb; e-mail: egolab@pzh.gov.pl

Congenital toxoplasmosis results from a primary infection with *Toxoplasma gondii* during pregnancy. Serological screening during pregnancy can lead to an early diagnosis of the infection and help to implement treatment, which slows down the disease progression in infected children. Tests for detecting the IgG antibodies are used for screening purposes. Conversion from a negative to a positive titer or a rise from low to a significantly higher titer in serial serum specimens is observed in the acute phase of the infection. The study was designed to assess tests for the demonstration of IgG antibodies used in serological monitoring of acute *Toxoplasma gondii* infection.

Four serological tests for detecting *T. gondii* – specific IgG antibodies were used: ARCHITECT Toxo IgG (Abbott), VIDAS Toxo IgG II (bioMérieux), COBAS Toxo IgG (Roche) and immunofluorescence indirect IF (in-house NIPH-NIH). The results of the tests were expressed in international units (IU). Statistical analysis was performed using a paired samples t-test.

Discrepancies of results obtained from a sample with low IgG titer were found: ARCHITECT (titer IgG 2.4 IU/ml) and VIDAS (4 IU/ml) tests results were ambiguous, while the results of COBAS (60.2 IU/ml) and IF (12 IU/ml) were positive. The difference between median IgG titer value measured by COBAS (562.5 IU/ml) and ARCHITECT (41.6 IU/ml) and titer values from other tests is statistically significant: COBAS – IF ($p=0.000$), COBAS – ARCHITECT ($p=0.000$), COBAS – VIDAS ($p=0.000$), ARCHITECT – IF ($p=0.056$), ARCHITECT – VIDAS ($p=0.000$). There were no statistically significant differences in median IgG values in serum when samples were tested using VIDAS (137.6 IU/ml) and IF (141.2 IU/ml) ($p=0.910$) assays.

Changing tests for the detection of *T. gondii* – specific IgG antibodies during serological screening in pregnant women can disrupt the diagnostic process of acute *Toxoplasma* infection.