

Prevalence of zoonotic pathogens in wild rodents living in the Białowieża Primeval Forest, Poland

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Small mammals serve as reservoir hosts for zoonotic protozoa, helminths, and tick-borne bacteria, and the prevalence of these pathogens in wild rodents may provide information on their circulation in nature. The Białowieża Primeval Forest (BPF) is one of the best preserved lowland forests in Europe inhabited by well-preserved communities of animals, which represents a unique opportunity to trace inter- and intra-specific transmission routes of pathogens. A total of 106 wild rodents: *Microtus oeconomus* (73), *Apodemus flavicollis* (18), *Clethrionomys glareolus* (13), *Glis glis* (2) were collected in BPF between 2010 and 2014. We focused on the detection of protozoa – *Babesia* spp., helminths – *Trichinella* spp., *Toxocara* spp., *Echinococcus* spp., and tick-borne bacteria – *Anaplasma* spp., *Candidatus* Neoehrlichia mikurensis, *Borrelia* spp. Whole eviscerated carcasses of rodents were digested to detect *Trichinella* spp. larvae, heart eluates were used for antibody detection, and spleens for molecular detection of protozoa and bacteria. No *Trichinella* spp. larvae were found in muscles; the prevalence of *Trichinella*-antibody was 3.8 % – *A. flavicollis* (2), *C. glareolus* (2), *Toxocara*-antibody 2.8% – *M. oeconomus* (1), *A. flavicollis* (1), *C. glareolus* (1), and no *Echinococcus*-antibody was stated. The occurrence of parasite-specific antibodies confirmed contact between rodents and the parasites and their presence in BPF. PCR confirmed the presence of *Babesia* spp. only in *M. oeconomus* (7) with a prevalence of 6.6%. No *Anaplasma* spp., *Candidatus* Neoehrlichia mikurensis, *Borrelia* spp. bacteria were confirmed in rodents from BPF.

The results of this study revealed the circulation of zoonotic parasites in the sylvatic habitat of BPF with a low prevalence; no tick-borne bacterial infestation was found in small rodents from BPF. The occurrence of the pathogen in rodents requires ongoing monitoring, as it represents an important reservoir of zoonotic diseases.

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