
Health, zoonotic pathogens and parasites

Vector-borne zoonotic pathogens in domestic cats in urban areas of Lithuania

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According to the European Pet Food Industry Federation report (2022), Europe is home to approximately 127.2 million domestic cats, with 26% of households owning at least one cat, making them the most popular pet choice across the continent. In Lithuania, around 70% of households have at least one dog or cat, with 114,600 officially registered domestic cats. Despite their benefits to humans, cats can act as reservoirs or accidental hosts for various pathogens transmitted by fleas, ticks, and mosquitoes, posing transmission risks to humans and other animals.

This study aimed to investigate the prevalence and genetic diversity of vector-borne pathogens in feline populations and their ectoparasites in urban areas of Lithuania. Blood samples were collected from 543 cats (both owned and those from animal shelters) in densely populated regions of central (Kaunas city) and western (Klaipėda city) Lithuania. Ectoparasites (153 fleas and 321 ticks) were collected from owned cats in seven Lithuanian cities. Molecular methods were used for pathogen detection, complemented by morphological blood tests to identify some pathogens in blood samples. In domestic cats and their ectoparasites, we detected two causative agents of cat scratch disease, *Bartonella henselae* and *Bartonella clarridgeiae*, as well as ruminant-associated *Bartonella* sp., and haemotropic *Mycoplasma haemofelis* and 'Candidatus M. haematominutum'. Human pathogenic *Rickettsia helvetica*, *R. conorii* subsp. *raoultii*, and *R. felis* were also identified. This study highlights the presence of diverse vector-borne pathogens in cats from densely populated regions, likely due to increased exposure to vectors in urban environments. The detection of these zoonotic pathogens in domestic cats, both pets and those in shelters, represents a significant public health concern in urban areas, underscoring the need for regular screening and effective vector control initiatives.