



ID 2998. National survey of the zoonotic rat hepatitis E virus in small mammals of Spain
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Introducción y Objetivo/Background and objectives

Rat hepatitis E virus (ratHEV) is an emerging zoonotic virus of global public health concern. Although the genus *Rattus* were traditionally considered the only animal host of this pathogen, recent studies have expanded the host range of ratHEV. However, the role of small mammals, excluding *Rattus*, in the epidemiology of this zoonotic virus in Europe is still unknown. Therefore, the aim of this study was to evaluate ratHEV circulation in other small mammal species in Spain.

Métodos/Methods

A retrospective nationwide cross-sectional study was conducted in Spain. In total 514 individuals, belonging to seven non-*Rattus* small mammal species, were collected between 2012 and 2023. Liver tissue of all individuals was collected, and viral RNA was evaluated using two real-time RT-qPCRs, sequencing positive samples using nested RT-PCRs. Whenever possible, faeces of positive individuals were also evaluated to assess the excretion of ratHEV.

Resultados/Results

RatHEV infection was confirmed in 15 small mammals (2.9%; 95%CI: 1.8-4.8). By species, the virus was detected in 14.5% (11/76) of house mice (*Mus musculus*), 0.7% (2/288) of common voles (*Talpa europaea*) and two out of eight garden dormice (*Eliomys quercinus*) ($P < 0.001$). Positives animals were detected in urban, farming and wild areas from Northern, Central and Southern Spain ($P < 0.001$). Viral RNA from faeces was detected in four house mice (36.3%; 95%CI: 7.9-64.8). Phylogenetic analyses evidenced a high genetic diversity of ratHEV sequences, revealing a homology from 95% to 100% with ratHEV sequences found in patients with acute hepatitis and rats from Spain, Germany and Hungary.

Conclusión y Relevancia/Conclusions and relevance

In conclusion, this study broads the host range of ratHEV in Europe, confirming that the virus is not only restricted to *Rattus* species. Our results highlight the importance of continued surveillance to fully understand the dynamics of ratHEV and its impact on public health.