

Emerging rodent-borne viral diseases in Italy: distribution and observed trends in the Province of Trento, Italy.

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Rodents play a key role as reservoirs of many zoonotic infectious diseases which represent an emerging public health threat worldwide. However, the circulation of rodent-borne pathogens is often underestimated since most infections are asymptomatic in the rodent hosts and underdiagnosed in human populations. In northern Italy, hantaviruses, arenaviruses and tick-borne encephalitis virus are harbored by some of the most widespread wild rodent species, such as the yellow-necked mouse (*Apodemus flavicollis*), bank vole (*Myodes glareolus*) and field vole (*Microtus arvalis*).

Here we report an overview of a long-term (2002-2015) live-trapping programme designed to monitor the distribution and seroprevalence of the main rodent-borne viral pathogens circulating in their rodent hosts in northeastern Italy (Province of Trento), including Puumala (PUUV) and Dobrava-Belgrade (DOBV) hantaviruses, lymphocytic choriomeningitis virus (LCMV) and tick-borne encephalitis virus (TBEV).

We also summarise the results of serological screening of the human population in the same area.

A significant increase in the seroprevalence of all but TBEV was observed both in rodents and humans. Efforts are underway to sequence these viruses using both classical (RT-PCR) and advanced molecular methods (targeted enrichment and high-throughput sequencing) in order to understand which variants are circulating in the region and indicate their potential pathogenicity.

We conclude that the general human exposure to these zoonoses in the region has increased, and therefore warn practitioners that related human diseases are a real possibility.