Shrew-associated hantaviruses in Germany

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Recently, a large number of novel hantaviruses has been discovered in shrews, moles and bats. Seewis virus (SWSV) was initially detected in the Eurasian common shrew (*Sorex araneus*) and other *Sorex* species. After the initial detection of SWSV in Switzerland the virus was also found in Germany, Czech Republic, Slovakia, Hungary, Finland, and Far East-Russia. Asikkala virus (ASIV), a novel hantavirus was detected in pygmy shrews (*Sorex minutus*) in Finland, Germany and Czech Republic. A total of 213 shrews were trapped at different sites in Germany. In addition, 700 shrews originated from a monitoring study in four regions of Germany. Common and greater white-toothed shrews (*Crocidura russula*) were investigated for SWSV, whereas pygmy shrews were tested for ASIV.
For non-monitoring and monitoring areas SWSV-RNA was detected in 5 out of 213 shrews (2.3%), and 42 of 700 shrews (6.0 %), respectively. Viral RNA was mainly detected in *S. araneus*, but also in a few *S. minutus*, and for the first time in crowned shrews *(S. coronatus*). No SWSV-RNA was detected in greater white-toothed shrews. ASIV-RNA was detected in 2 out of 54 pygmy shrews (3.7%).
In conclusion, this study suggests a continuing abundance of SWSV and ASIV in shrew populations at several sites in Germany. Future studies will be dedicated to understand the potential influence of changes in shrew populations on the prevalence and molecular evolution of SWSV. The zoonotic potential of SWSV will be investigated by serological analyses in human risk groups.

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