

N22

Human Puumala orthohantavirus cases in a company of northwestern Germany

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Keywords: Puumala orthohantavirus, human cases, Myodes glareolus, hantavirus outbreak

In 2001, laboratory diagnosed acute hantavirus infection and viral haemorrhagic fever became notifiable in Germany. Besides the occurrence of high endemic regions in western and southwestern Germany, recorded hantavirus disease cases are subject to large annual fluctuations culminating in so-called hantavirus outbreak years. The main causative agent is Puumala orthohantavirus (PUUV) harbored by its natural host, the bank vole (*Myodes glareolus*).

In the end of the outbreak year 2017, employees of a distribution company in the federal district Graftschaft Bentheim showed typical signs of hantavirus disease. In early 2018, bank vole trappings were conducted at the company. Trapped rodents and hospitalized employees were tested by IgG-ELISA and by one-step PUUV S and L segment RT-PCRs. In addition, a questionnaire survey among the employees was performed.

According to the questionnaire, a rodent infestation of the company building was observed in late 2017. In total, 5 of 8 employees identified the invasive rodents as bank voles. Out of 48 trapped bank voles 11 (23%) were tested positive for PUUV by IgG-ELISA and 13 (27%) were positive by S segment RT-PCR. From one hospitalized employee a partial PUUV L segment sequence could be generated. The human PUUV L segment sequence was identical to bank vole L segment sequences obtained from the company compound.

In conclusion, this One Health investigation gave molecular epidemiological evidence for PUUV infection of employees of a company.