

O229

Oral Session

Emerging infectious diseases

**THE TICK-BORNE PATHOGEN CANDIDATUS NEOEHRlichIA MIKURENSIS IN IXODES RICINUS AND NATURAL VERTEBRATE HOSTS IN SOUTHERN SWEDEN**

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The bacterium *Candidatus Neoehrlichia mikurensis* has recently been recognized as a human pathogen, following its discovery in human patients from several European countries. It appears to be one of the most common pathogens in *Ixodes ricinus* in large parts of Europe and can be found in several different rodent species that are likely to be reservoir hosts. Recently, seven human cases were reported from China, showing a widespread distribution of *Candidatus N. mikurensis* across Europe and Asia.

We developed a qPCR assay for identification and quantification of *Candidatus N. mikurensis* DNA, and determined the prevalence in questing *I. ricinus* in southern Sweden to be 6.0% (n=949). The prevalence in bank voles (*Myodes glareolus*), one of the most abundant rodent species in northern Europe, was 18%, indicating that bank voles could serve as important reservoir hosts, if it turns out that they are competent hosts for this bacterium. The co-infection rate with *Borrelia afzelii* was significantly higher than expected from random co-occurrence, both in *I. ricinus* and in bank voles, possibly reflecting positive interactions between these pathogens or a general susceptibility in certain individuals in the vole population. The epidemiology in the bank voles differed quite dramatically between *B. afzelii* and *Candidatus N. mikurensis*. The prevalence of *Candidatus N. mikurensis* increased radically over the summer season, resulting in that almost half the rodent population was infected at the end of the summer. In contrast, the prevalence of *B. afzelii* varied less dramatically over the transmission season. In conclusion, *Candidatus N. mikurensis* DNA frequently occurs in *I. ricinus* and rodents in southern Sweden, indicating that the risk for humans to come into contact with infected ticks is substantial.