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Longterm follow up of a natural focus of tularemia in south-west Slovakia

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Aims: Identification of potential rise in epizootic activity of a tularemia natural focus for to signal the risk of disease occurrence in humans.

Methods: Locality in a lowland of south-west Slovakia identified as a natural focus of tularemia in 1964, when *Francisella tularensis* was isolated from small mammals *Microtus arvalis*, *Mus musculus* and *Rattus norvegicus* during an epidemic outbreak, was selected for ecological studies and followed from 1994 to 2008. Ectoparasites and organs of animals were examined by inoculation into white mice, partially by cultivation and PCR method.

Results: Circulation of *F. tularensis* was confirmed by an isolation from *Ixodes ricinus* tick adults collected from vegetation in April 1996 – prevalence of infection 0.2%. Activation of the natural focus was proved by isolations of the agent from a dominant species of *Apodemus flavicollis* mice live-trapped in October 2000 and November 2002 – prevalence of infection in animals being 2.2% and 9.1%, respectively. All strains were typed as *F. tularensis* subsp. *holarctica*, biovar II. Ectoparasites collected from small mammals were found negative in biological experiments. Results of longterm systematic studies correlated with epidemic occurrence of tularemia in the endemic region of south-west Slovakia.

Conclusions: Study showed that longterm follow up of selected localities being able to detect an activation of the epizootic process and epidemiologically important changes. Methods of molecular biology tested were proved promising and can extend potential of classical techniques in the surveillance of tularemia natural foci.