



**P 46 Tick-borne encephalitis focus on the southern border of its area in the Voronezh region of Russia (51°42'N and 40°30'E)**

O.V. Motuzova<sup>a</sup>, A.S. Shevtsova<sup>a</sup>, L.Iu. Romanova<sup>a</sup>, G.G. Karganova<sup>a</sup>,  
D.V. Trankvilevsky<sup>b</sup>, L.D. Barkalova<sup>b</sup>, Y.O. Bahmeteva<sup>b</sup>

<sup>a</sup> Chumakov Institute of Poliomyelitis and Viral Encephalitis, RAMS, Moscow region, Russia (e-mail: karganova@bk.ru)

<sup>b</sup> Federal Government Health Care "Center for Hygiene and Epidemiology in the Voronezh region", Russia

The area of tick spread is wider than that of viral encephalitis. Studying of tick-borne encephalitis virus (TBEV) spreading on the border of its area represents a particular interest. Voronezh region is situated in the middle of the European part of Russia. There are 3 kinds of ticks in this region: *Ixodes ricinus* L., *Dermacentor. marginatus* Sulz., and *D. reticulatus*. The first cases of TBE were revealed in 1942. Since 1969 till present time, no attempts to isolate TBEV were made. Sporadic morbidity of encephalitis without determined etiology is registered in this region now.

The purpose of the present investigation was the study of tick populations of the Voronezh region for TBEV and *Borrelia* infestation.

A total of 100 ticks was collected in March and April, 2008. Tick species determination was accomplished using a microscope: 26% were *I. ricinus* and 74% *D. reticulatus*. Tick suspensions were checked using reverse OT-PCR and by intracerebral inoculation of suckling mice.

No borreliae were found in the *D. reticulatus* pools. Percentage of *Borrelia*-infected *I. ricinus* was 19.2. TBEV RNA was absent in all suspensions. Then we used 8 pools of tick suspensions for intracerebral infection in 1–2-day-old suckling mice. Three pools caused disease. After the second passage, cerebral suspensions were evaluated for the presence of the virus by PCR. TBEV RNA was detected in one of the cerebral suspensions indicating the presence of TBEV in *I. ricinus*. The nucleotide sequence fragment coding E protein was determined. The revealed TBEV isolate belongs to the Siberian genotype.

The possibility of virus circulation at the boundary of its range was shown for the first time, using recent materials. We also obtained a strain of the Siberian genotype from *I. ricinus* ticks suggesting that *I. ricinus* can be an adequate vector of the Siberian subtype of TBEV. This investigation is of epidemiological significance and gives new information of the disease spread in previously non-endemic areas of TBE with a predominance of these species of ticks.