



P 63 Tick-transmitted infections in Kazakhstan

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The spectrum of causative agents of infectious diseases, carried and transmitted by ticks, had been defined. Traditionally, in Kazakhstan those infections are known as tularemia, tick-borne encephalitis, and Congo-Crimean hemorrhagic fever (CCHF). Registration, observation, and prophylactic procedures for detecting and treating tick-borne encephalitis infection had been conducted in epidemic zones. However, it had been observed that some patients have various symptoms like high fever, despite the fact of negative results on the existence of tularemia, tick-borne encephalitis, and CCHF infection.

The purpose of our work was to define a spectrum of tick-transmitted infectious diseases in order to conduct epidemiological control over these infections. Individual research on *I. persulcatus* ticks had been carried out with 241 ticks in West-Kazakhstan region using PPB method and a test system called "TBEV, *B. burgdorferi* sl, *A. phagocytophilum*, *E. chaffeensis*/*E. muris*".

Tick-borne encephalitis virus was detected in 2% (5/241) of observed ticks. These results represent moderate probability of disease spread in the region, and the necessity of conducting prophylactic works. The found virus was classified as Siberian subtype. This fact signals a high complexity level of sickness that leads to permanent paralysis. Clinical observations of people who were bitten by ticks also indicate the possibility of Lyme disease to develop. Our research had proved this hypothesis; DNA of *Borrelia burgdorferi* had been detected in 40% (97/241) of ticks. Moreover, 2% of ticks had *B. miyamotoi*. Thus, Lyme disease, over which no controls are set across Kazakhstan, has a high spread potential, and the disease can be caused by other activators.

The second place based on infection frequency in ticks was given to ehrlichiosis, 9% (21/241). The causative agent was classified as *Ehrlichia muris*. There are no epidemiological controls on ehrlichiosis in Kazakhstan. *Anaplasma phagocytophilum* was identified in 2% (4/241) of ticks.

Our research shows that besides tularemia and tick-borne encephalitis West-Kazakhstan region has records of various types of tick-borne disease like Lyme disease and ehrlichiosis. It is required to set epidemiological controls on these infections – in the way of conducting observations of ticks, conducting prophylactic works, and examining patients for Lyme disease and ehrlichiosis.