

**P0421**

**Poster Session I**

**Tick borne infections**

**TICK-BORNE INFECTIOUS DISEASE IN REPUBLIC OF KAZAKHSTAN**

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**Objectives.** There is official registration of Congo-Crimean Hemorrhagic Fever (CCHF), Tick-Borne Encephalitis (TBE), Tick-Borne Rickettsiosis of North Asia (TBR) and Tularemia in Kazakhstan (KZ). However, the 47 species of ticks were found in different geographical zones at KZ large territory. So, objective of this work was to study possibility of other tick-borne infectious diseases presence in KZ.

**Methods.** We tested different species of ticks in PCR and serums of fever patients and of tick-bite persons for tick-borne pathogens antibody in ELISA. We provided our investigations in different regions of KZ during 2005-2012.

**Results.** Investigation of 281 *Ixodes persulcatus* collected in Eastern-Kazakhstan Region (EKR) showed presents of *Borrelia burgdorferi* (40,9%), *Ehrlichia muris* (7,8%), TBEV (2,8%), *Borrelia miyamotoi* (2,1%) and *Anaplasma phagocytophilum* (2,1 %). Similar investigation of 212 *I. persulcatus*, collected in Almaty Region (AR) founded presents of *B. burgdorferi* (36,8%), *E. muris* (6,1%), *B. miyamotoi* (5,7%) TBEV (3,3%), and *A. phagocytophilum* (1,4 %). There is Tick-Borne Rickettsiosis of North Asia (TBR) endemic zone in the North-Eastern Area of KZ (North Kazakhstan Region - NKR, Pavlodar Region and EKR). The TBR incidence had increased during last years. For example TBR incidence (per 100 000) had grown from 4,84 (2008) to 26,78 (2012) in NKR. Testing of 52 TBR patients serums detected not only anti-rickettsia antibodies, but the anti-borrelia IgM in 34,3% and IgG in 40,0% of serums too. Also we founded anti-borrelia IgM in 37,8% and IgG in 31,1% of 135 tick-bite persons serums, which had no history of fever infection. There is registration of spotted fever with unknown origin cases in one of southern regions of KZ – Kyzylorda region. We founded there *B.miyamotoi* DNA in 5,3% of *Dermacentor marginatus*. Also we detected anti-rickettsia antibodies (IgM in 67,5% and IgG in 71,1%) and anti-borrelia antibodies (IgM in 23,4% and IgG in 30,7%) in the serums of 47 spotted fever patients.

**Conclusion.** The spectrum of tick-borne infectious diseases is more widely than in official registration. We founded new for KZ pathogens in ticks, such as different *Borrelias*, *Rickettsias*, *Ehrlichia* and *Anaplasma*. The endemic for TBE regions are endemic for Borreliosis and Ehrlichiosis too. We demonstrated the possibility of few pathogens simultaneous presence in ticks, which infected human by few infectious diseases at once. So it's possible to meet mixed infectious disease and subclinical forms of infectious disease too. There are rather big amount of fever with unknown origin in KZ, so investigations must be continued. The surveillance of tick-borne infectious diseases must be changed and strengthening. Of course, it's impossible to provide modern tests on district level, but it's possible to do it on region level, and send positive or unknown samples to reference laboratory.