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ABSTRACT BOOK
SEROPREVALENCE FOR WEST NILE VIRUS, COXIELLA BURNETII AND BORRELIA BURGDORFERI SENSU LATO IN A HIGH RISK POPULATION

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Danube Delta is a paradise for birds, mosquitoes, arthropods and sheep. Chilia Veche is a small village from Danube Delta with 2132 citizens, exposed to reservoirs and vectors for different infections. The average of age is over 40 and most residents work in agriculture, livestock and fisheries. The aim of our study was to evaluate the seroprevalence for West Nile virus, Coxiella burnetii and Borrelia burgdorferi in a very exposed population. Data regarding such a population is lacking in Romania. We collected blood samples, during two days in July 2015 during the summer school of COST action TD13030 (EurNegVec) from all healthy adults who have agreed to participate in our study by signing the informed consent and filling our questionnaire regarding risk factors for the infections. We measured the antibody titer using ELISA test for: West Nile virus, Coxiella burnetii phase 1 and 2 and Borrelia burgdorferi sensu lato, and we confirmed West Nile with neutralization test and Borrelia with western blot test. We performed a statistical analysis regarding risk factors for different infections. There were 71 patients (3.5% of population), 47 women (66%), average age 53, 51 residents spent all their life in Chilia Veche, 40 of residents spent all the day in outdoor activities, 66 recognized that are bitten by mosquitoes and 6 recognized history of tick bite, 49 have water reservoirs in their backyards, 52 have backyard birds and 13 have horses. 10 residents have occupational risk for Q fever. One resident recognized medical history of meningitis and one a skin lesion that could have been Erythema migrans. Seroprevalence for West Nile was 7%, for Coxiella burnetii 27% (60% for residents with occupational risk and 21% for those without
occupational risk, 21% for women and 37% for men, statistically higher below age 52, p=0.04) and for *Borrelia burgdorferi* sensu lato 7%. No correlation was found between history of tick bite and serological findings for *Borrelia*. Only correlation between West Nile positive serology was found with age more than 67 and living in Chilia Veche more than 80% of the life. In conclusion, seroprevalence for *Coxiella burnetii* is high in this region of the country, especially in young males; longer exposure to mosquitoes bite is correlated with positive serology for West Nile virus; Population from rural area is not aware about tick bite even if the seroprevalence for *Borrelia burgdorferi* is high.