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Seroprevalence study of *Francisella tularensis* among farmers and veterinarians in Georgia

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Francisella spp. causes zoonotic infections which are present in glandular, ulceroglandular, oculoglandular, oropharyngeal and pneumonic forms with significant morbidity. *F. tularensis* is considered to be a biological threat agent that poses a substantial risk to public health. Mammals can transmit the bacteria into humans directly through bites and scratches as well as through arthropod vectors and contamination of water and food sources (Ellis, Oyston et al. 2002). The disease is considered to be endemic for Georgia within a few focal areas. Small and large outbreaks are periodically reported. A serosurvey of *F. tularensis* was conducted among veterinarians and farmers to determine risk for exposure and to determine risk factors for infection. A total of 300 blood samples were collected from veterinarians and farmers (150 combined samples), as well as a control group (150 samples from general population of Georgia). Samples were tested for *F. tularensis* specific antibodies by using a standard micro-agglutination (MAT) assay. Briefly, serial dilutions of serum were incubated overnight with safranin-stained, formalin-killed live vaccine strain (LVS) cells at room temperature, and a titer was assigned. Samples with a titer of 1:128 or greater were reported as positive. All MAT positive samples were confirmed by Western blot. Eleven serum samples (11/110) from farmer group and 10% (4/40) from veterinary group were positive for *F. tularensis* Ab. None of the control group individuals were positive. This is the first study of seroprevalence of *F. tularensis* diseases among veterinarians and farmers. It provides a first look at the potential exposure of animal workers and the general population to zoonotic diseases. Veterinarians and farmers are at increased risk tularemia infections. Hence, this information could be a valuable contribution for the public health system of Georgia.

Biography

Nazibrola Chitadze is the Head of Serology Laboratory in the Department of Virology, Molecular Epidemiology and Genome Research at National Center for Disease Control and Public Health. She has done her graduation in Preventive Medicine, Faculty of Tbilisi State University in 2001. Her current research interests include assessment and evaluation cell mediated and humoral immunity developed in humans in response to *Bacillus anthracis* and Tularemia infection. In 2016, she was awarded for a special contribution to the field of public health care.

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