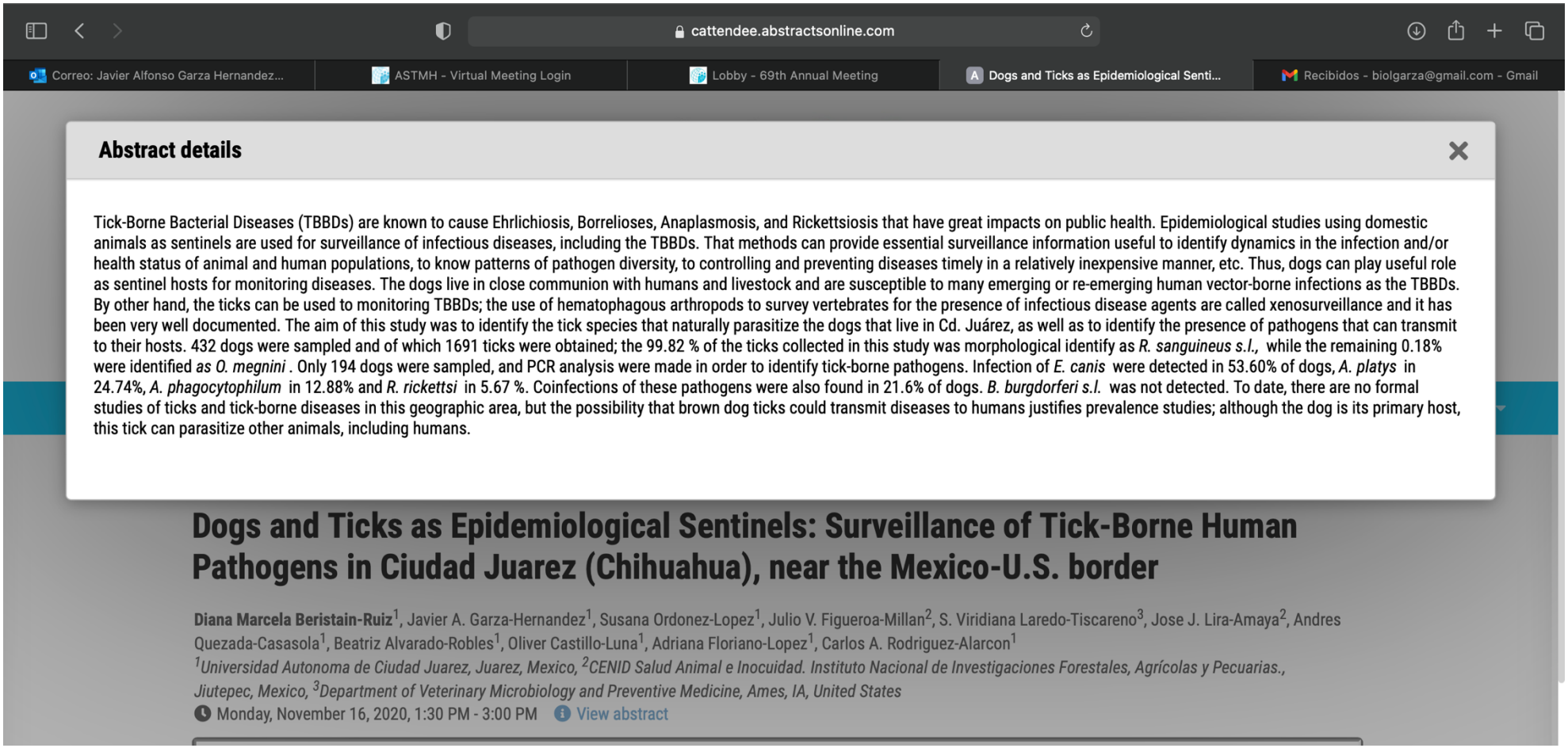

Abstract details

Tick-Borne Bacterial Diseases (TBBDs) are known to cause Ehrlichiosis, Borrelioses, Anaplasmosis, and Rickettsiosis that have great impacts on public health. Epidemiological studies using domestic animals as sentinels are used for surveillance of infectious diseases, including the TBBDs. That methods can provide essential surveillance information useful to identify dynamics in the infection and/or health status of animal and human populations, to know patterns of pathogen diversity, to controlling and preventing diseases timely in a relatively inexpensive manner, etc. Thus, dogs can play useful role as sentinel hosts for monitoring diseases. The dogs live in close communion with humans and livestock and are susceptible to many emerging or re-emerging human vector-borne infections as the TBBDs. By other hand, the ticks can be used to monitoring TBBDs; the use of hematophagous arthropods to survey vertebrates for the presence of infectious disease agents are called xenosurveillance and it has been very well documented. The aim of this study was to identify the tick species that naturally parasitize the dogs that live in Cd. Juárez, as well as to identify the presence of pathogens that can transmit to their hosts. 432 dogs were sampled and of which 1691 ticks were obtained; the 99.82 % of the ticks collected in this study was morphological identify as *R. sanguineus s.l.*, while the remaining 0.18% were identified *as O. megnini* . Only 194 dogs were sampled, and PCR analysis were made in order to identify tick-borne pathogens. Infection of *E. canis* were detected in 53.60% of dogs, *A. platys* in 24.74%, *A. phagocytophilum* in 12.88% and *R. rickettsi* in 5.67 %. Coinfections of these pathogens were also found in 21.6% of dogs. *B. burgdorferi s.l.* was not detected. To date, there are no formal studies of ticks and tick-borne diseases in this geographic area, but the possibility that brown dog ticks could transmit diseases to humans justifies prevalence studies; although the dog is its primary host, this tick can parasitize other animals, including humans.

Dogs and Ticks as Epidemiological Sentinels: Surveillance of Tick-Borne Human Pathogens in Ciudad Juarez (Chihuahua), near the Mexico-U.S. border

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