

Presentation Abstract

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Presentation: 017 - Indigenous and scientific knowledge regarding ticks and tick-borne diseases in wildlife-livestock interface areas in Zimbabwe

Location: Uxmal 1 (5)

Pres. Time: Tuesday, Nov 03, 2015, 5:45 PM - 6:00 PM

Category: +D2. Research

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Abstract:

Purpose:
 Tick-borne diseases (TBD), including heartwater, anaplasmosis, babesiosis and theileriosis impact severely on livestock productions in sub-Saharan Africa. The causative pathogens have been isolated from wild ruminants but their roles in the transmission to cattle remain unclear. We report on the perceptions by local farmers and serological evidence of TBD transmission in the Great Limpopo Transfrontier Conservation area in Zimbabwe.

Methods:
 The comparative study design included three villages: 1) porous interface (direct livestock/wildlife contacts); 2) fenced interface (only indirect contacts); 3) non-interface negative control (no wildlife). Blood samples were taken from cattle at dip-tanks in 2007-2009 and analysed using I-ELISA for *Anaplasma marginale*, and IFAT for *Babesia bovis*, *B. bigemina*, *Ehrlichia ruminantium* and *Theileria parva*. Interviews of individual farmers including "free listing" of livestock disease names were performed at dip-tanks in 2008-2009. A questionnaire survey on TBD awareness and impacts was also performed in the three villages in 2014.

Results:
 At all sites, we found very high herd prevalence (>80%) of *A. marginale* and *E. ruminantium*, and relatively low levels for the two babesiosis (1-20%). Evidence of *T. parva* was only found at the porous interface. Except for *T. parva*, comparisons of TBD prevalence among sites were not significantly different (χ^2 , $P > 0.05$). TBD ranked high in the lists of livestock diseases established by local farmers (heartwater, babesiosis and anaplasmosis among the 10 most frequently cited). Although most farmers respondents ($n = 379$; 49.1%) believed that ticks were shared between livestock and wildlife, most of them did not know or doubted that TBD are shared (63.0%).

Conclusions:
 The serological study did not allow clear conclusions regarding transmission of TBD between livestock and wildlife, which was also reflected by farmers' perceptions. Additional studies using molecular techniques and/or longitudinal surveys are needed.

Relevance:
 This study illustrates the opportunity for the involvement of indigenous knowledge and perception in co-constructed studies of complex epidemiological studies

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