Project B: Seroprevalence of Babesia caballi and Theileria equi in the Swiss horse population

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Key words
Theileria equi, Babesia caballi, Equine piroplasmosis, Indirect Fluorescent Antibody Test (IFAT), Horse, Switzerland

Aim of the study
To date, information on the epidemiology of equine piroplasmosis is very limited in Switzerland. The goal of this study was therefore to determine T. equi and B. caballi seroprevalences in a representative number of sera from adult imported and adult indigenous/domestic (i.e. bred in and raised in Switzerland) horses.

Material and methods
A representative sample of 689 sera from horses kept in Switzerland (230 indigenous and 459 imported) was serologically investigated for antibodies against T. equi and B. caballi using the Indirect Fluorescence Antibody Test (IFAT).

Results and significance
A total of 50 (7.3%) horses were seropositive for EP: 30 horses (4.4%) for T. equi, 10 (1.5%) for B. caballi and 10 (1.5%) had antibodies against both parasite species. Overall, the seroprevalence of T. equi was significantly higher than that of B. caballi (p=0.002). In domestic horses (animals bred and raised in Switzerland) seropositivity rate was 4.8% (11/230). Four (1.7%) of these horses were positive for T. equi-, six (2.6%) for B. caballi-antibodies and one (0.4%) had antibodies against both species. In imported horses, the EP-infection rate was 8.5% (39/459) and the prevalences were 5.7% (26/459) for T. equi, 0.9% (4/459) for B. caballi and 2.0% (9/459) had antibodies against both parasite species. Unlike in domestic horses, where no significant difference in seroprevalences could be observed between the species, the seroprevalence of T. equi was significantly higher (p<0.001) than that of B. caballi in imported horses. More than half of the imported horses that tested positive for EP originated from France. Horses imported from France, Spain and Portugal had a significantly higher and horses imported from Germany a significantly lower seroprevalence of EP compared to domestic horses. There were no associations between sex, age, weight loss, pasture time, surgery or blood transfusions with T. equi and B. caballi seroprevalences. The overall seroprevalence of 7.3% clearly shows that EP is a threat to the health of the horses kept in Switzerland. With the presumed expansion of permissive tick vectors, EP has the potential to further increase in importance. Therefore, continuous monitoring is warranted.

Publications, posters and presentations

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