

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

Sigg, L. (2010) Seroprevalence of *Babesia caballi* and *Theileria equi* in the Swiss horse population. Dissertation, Veterinärmedizinische Fakultät, Universität Bern.

Sigg, L.; Gerber, V.; Gottstein, B.; Doherr, M.; Frey, C. (2010) Seroprevalence of *Babesia caballi* and *Theileria equi* in the Swiss horse population. *Journal of Parasitology International*; 59, 313-317.

Sigg, L.; Gerber, V.; Gottstein, B.; Doherr, M.; Frey, C. (2010) Prävalenz von Equiner Piroplasmose in der Schweizer Pferdepopulation 4. Jahrestagung Netzwerk Pferdeforschung Schweiz, Avenches, Switzerland.

Sigg, L.; Gottstein, B.; Doherr, M.; Frey, C.; Perler, L.; Gerber, V. (2010) Prävalenz von Equiner Piroplasmose in der Schweizer Pferdepopulation. «Technical Corner», Federal Veterinary Office (FVO), Berne, Switzerland.

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