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SEROPREVALENCE AND RISK FACTORS OF BRUCELLOSIS IN CAMELS IN AND AROUND ALZULFI, SAUDI ARABIA

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ABSTRACT

This cross-sectional study was conducted from December 2013 to November 2014 to determine the seroprevalence of brucellosis in camels and to investigate its risk factors in and around Alzulfi, Kingdom of Saudi Arabia. A total of 750 sera were collected from camels from 59 herds and tested using Rose Bengal Plate Test (RBPT) and Compelisa (cELISA). The overall seroprevalences were 6.5% using RBPT and 3.2% using cELISA while the herd-prevalence was 45.8% and the within-herd prevalence ranged from 1.0% to 9.9%. With exception of between-locations, there were no significant statistical variations between the seroprevalence estimated for the different categories of the investigated risk factors. In the univariate analysis, location (χ^2=13.65, p=0.001) and watering (χ^2=4.830, p=0.028) were statistically associated with RBPT-positivity whereas, location (χ^2=4.304, p=0.038), age (χ^2=6.306, p=0.043) and awareness (χ^2=5.106, p=0.024) were associated with cELISA-positivity. The multivariate analysis showed that camels in Alzulfi (Exp(B)=3.13, p=0.001) and she-camels (Exp(B)=2.38, p=0.038) were related to RBPT-positivity and camels in Alzulfi (Exp(B)=5.76, p=0.001), the age-group 6-10 years old (Exp(B)=6.55, p=0.016) and semi-intensive husbandry (Exp(B)=5.80, p=0.009) were associated with cELISA-positivity. A substantial agreement between the 2 tests was shown by Kappa analysis. In conclusion, the seroprevalence reported in this study was not similar in and around Alzulfi. A wide-area multi-animal species survey of brucellosis is warranted in Saudi Arabia.

Keywords: Brucellosis, camel, Saudi Arabia, seroprevalence