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CCHFV infection risk in Cameroon

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Background and objectives: Crimean-Congo hemorrhagic fever (CCHF) is a fatal tick-borne viral infection of humans. The CCHF virus circulates in a tick-vertebrate-tick cycle. Following infection animals do not show clinical symptoms but may develop viremia for up to two weeks. Antibodies can be detected for several years. Therefore, the screening of ruminants is a good indicator for CCHFV presence in a country. However, virus genome detection is the ultimate proof of current CCHFV circulation. CCHFV is present in Africa, Asia and Europe, but most studies are outdated. In Cameroon no investigation on CCHFV was done so far, even though CCHFV is known to circulate in neighbouring countries.
Materials and methods: Approximately 1000 bovine serum samples were tested for CCHFV-specific antibodies by using two different ELISAs and/or IFA. Additionally 109 Hyalomma ticks, which were collected from infested cattle in a high prevalence area in Northern Cameroon, were tested for CCHFV genome using a novel multiplex one-step RT-qPCR. This highly sensitive and specific RT-qPCR enables to detect all six known CCHFV clades.
Results: An overall CCHFV-specific antibody prevalence of 74% was detected. The PCR investigation resulted in 7 CCHFV genome positive H. truncatum ticks. These CCHFV sequences clustered together with others form the African clade.
Conclusion: This first proof of CCHFV circulating in Cameroon shows that there is an infection risk for the human population, especially for risk groups.