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330 THE SPATIOTEMPORAL DYNAMICS OF CRIMEAN-CONGO HAEMORRHAGIC FEVER VIRUS IN ENZOOTIC IBERIAN SCENARIOS.

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Abstract Text

Crimean-Congo haemorrhagic fever (CCHF) is a highly lethal zoonosis caused by an Orthonairovirus that is mainly transmitted through the bite of *Hyalomma* spp. ticks. CCHF is an emerging human disease in Spain, where it has caused 8 cases with 3 deaths since 2016 (43% case fatality rate). Since the first detection of CCHF virus (CCHFV) in *H. lusitanicum* ticks of red deer (*Cervus elaphus*) in 2010, this wild ungulate proved to be an excellent indicator of virus circulation. This study seeks to better understand the long-term spatiotemporal dynamics of CCHFV along a south-to-north gradient with 6,178 red deer sampled in 21 years (1999-2020) to aid in better predicting virus exposure risks and modulating environmental factors. A retrospective annual cross-sectional survey was designed for 8 study areas on the basis of findings of a previous cross-sectional survey of red deer. The presence of specific CCHFV antibodies in sera was estimated using a commercial ELISA (ID Screen® CCHF Double Antigen Multi-species, IDvet, France). The overall seroprevalence was 72.3% (CI95%:71.2-73.4). The prevalence of anti-CCHFV antibodies was very high and similar in the 6 areas located in the southern half of mainland Spain (72.9-87.5%), whereas it was lower in central (47.2%) and northern (30.6%) areas of the country. Within-area CCHFV exposure displayed a varying pattern that was related to annual temperature and rainfall in a preliminary statistical modelling of data from two areas. These findings show the widespread circulation of CCHFV across mainland Spain and further support previous findings suggesting that the virus is enzootic in the country. Being enzootic, the question is why CCHF did not emerge before. A detailed and thorough analysis of the environmental drivers of exposure variation will provide insights to better predict and prevent transmission of CCHFV to humans.