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CORONAVIRUS DISEASE 2019 UPDATE (172): ANIMAL, GERMANY, CATTLE, RESEARCH, SEROSURVEILLANCE

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A ProMED-mail post
http://www.promedmail.org
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International Society for Infectious Diseases
http://www.isid.org

Date: Mon 29 Aug 2022 [accessed]
Source: Emerging Infectious Diseases (EID) Research Letter [abridged, edited]
https://wwwnc.cdc.gov/eid/article/28/9/22-0125_article

ref: Wernike K, Böttcher J, Amelung S, et al. Antibodies against SARS-CoV-2 Suggestive of Single Events of Spillover to Cattle, Germany. Emerg Infect Dis. 2022; 28(9): 1916-1918

Abstract

Human infection with SARS-CoV-2 poses a risk for transmission to animals. To characterize the risk for cattle, we serologically investigated 1000 samples collected from cattle in Germany in late 2021. Eleven antibody-positive samples indicated that cattle may be occasionally infected by contact with SARS-CoV-2-positive keepers, but we found no indication of further spread.

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Communicated by:
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[The paper, authored by Friedrich-Loeffler-Institut (FLI) researchers, includes the following notable concluding remarks (references omitted):

"Our findings of a low number of individual seropositive cattle on several farms demonstrate that cattle might be occasionally infected and seroconvert after contact with infected humans. However, in keeping with experimental infection studies, intraspecies transmission seems likewise to not occur in the field. Nevertheless, cattle farms should be included in future monitoring programs, especially because another coronavirus (i.e., BCoV) is highly prevalent in the cattle population and a BCoV [doi: 10.1016/j.cvfa.2010.04.005] infection did not prevent a SARS-CoV-2 infection in a previous study. Furthermore, we do not know the susceptibility of animal hosts for the omicron variant. Double infections of individual animals could potentially lead to recombination between both viruses, a phenomenon described for other coronaviruses. Although emergence is highly unlikely because of the low susceptibility of cattle for SARS-CoV-2, a conceivable chimera between SARS-CoV-2 and BCoV could represent an additional threat. Hence, ruminants should be included in outbreak investigations, and regular screenings should be performed to exclude any spread of new variants in the livestock population."

During a 2020 study by the same institute, FLI (see ProMED post 20201022.7883213), the authors included the following relevant comment: "In regions with large cattle populations and high prevalence of SARS-CoV-2 infection in humans, such as the United States or countries in South America, close contact between livestock and infected animal owners or caretakers could cause anthropo-zoonotic infections of cattle, as has been already described for highly susceptible animal species such as minks, felids, and dogs."

Besides cattle, BCoVs and bovine-like CoVs were identified in various, naturally infected domestic and wild ruminant species (water buffalo, sheep, goat, dromedary camel, llama, alpaca, deer, wild cattle, antelopes, giraffes, and wild goats), dogs, and humans. BCoV pathogenesis, epidemiology, interspecies transmission, immune responses, vaccines, and diagnostics have recently been reviewed [Citation: Vlasova AN & Saif LJ (2021). Bovine Coronavirus and the Associated Diseases. Front. Vet. Sci. 8: 643220; doi: 10.3389/fvets.2021.643220.]

Other coronaviruses are known to naturally infect and cause disease in various animal species; for example, the viral pig diseases Transmissible gastroenteritis of swine, Porcine respiratory coronavirus, Porcine epidemic diarrhea, and Porcine hemagglutinating encephalomyelitis, and the poultry diseases Avian infectious bronchitis and Turkey coronavirus (bluecomb virus).

With thanks to Mod.SF for this report. - Mod.AS

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See Also

2021

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