

High prevalence of SARS-CoV-2 in dogs and cats living in COVID-19 positive

households

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12b. Epidemiology- local, regional, global

Oral

M. Kannekens-Jager¹, Y. Groot De¹, H.S. Kooistra¹, H.F. Egberink¹, S. Zhao¹, J.A. Wagenaar¹, B. Duim¹, E.M. Broens¹

Utrecht University - Utrecht (Netherlands)

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here This study is part of an interdisciplinary research project called “Fighting COVID-19 in animals and humans, a one health approach” conducted by a research consortium consisting of Faculty of Veterinary Medicine of Utrecht University (coordinator), Wageningen University & Research and Erasmus Medical Center united within the Netherlands Centre for One Health (NCOH).

Background Incidental cases have shown that COVID-19 positive owners can transmit SARS-CoV-2 to their dog or cat. The close contact between owners and their pets and the interaction between dogs and cats from different households raises the question whether these animals play a role in the transmission of SARS-CoV-2. In this study the presence of SARS-CoV-2 in dogs and cats is investigated in households with COVID-19 positive humans.

Methods From July - December 2020 the Municipal Health Service informed pet owners that tested COVID-19 positive about the possibility to join a study on COVID-19 in dogs and cats. Interested pet owners contacted us by email or phone and a house visit was planned. A mobile veterinary clinic was used for the house visits. Oropharyngeal and rectal swabs were taken from dogs and cats in the COVID-19 positive households for qPCR detection of SARS-CoV-2, and a blood sample was taken for detection of antibodies against SARS-CoV-2 (using an in-house ELISA and Virus Neutralization Test). A short questionnaire was conducted and an informed consent form was signed by pet owners.

Results In total, 156 dogs and 155 cats from 196 COVID-19 positive households spread across the Netherlands were included. Six cats and seven dogs (13/311; 4.2%) tested qPCR-positive and 31 cats and 23 dogs (54/308; 17.5%) tested seropositive in 20.4% (40/196) of the households. In general, no or mild clinical signs (respiratory and/or gastro-intestinal) were reported by owners of positive pets. All owners of qPCR-positive pets were contacted for resampling of all pets in the household 1 - 3 weeks after the first sampling moment. Two owners declined resulting in resampling of 11 index pets and 8 contact pets. No contact pets were tested SARS-CoV-2 positive at the resampling moment. Antibodies were detected in all qPCR-positive animals, confirming an active SARS-CoV-2 infection.

Conclusions Our study reveals a high prevalence of COVID-19 in dogs and cats living in close contact with COVID-19 positive persons. The most likely route of transmission seems to be from human to pet. COVID-19 positive persons are recommended to avoid contact with their pets to prevent transmission of SARS-CoV-2.

Conflicts of interest

Other support (please specify)

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