SARS-CoV-2 Infection in Cats: Susceptibility, Sequelae, & Reinfection

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In the literature

Chiba S, Halfmann PJ, Hatta M, et al. Protective immunity and persistent lung sequelae in domestic cats after SARS-CoV-2 infection. *Emerg Infect Disease*. 2021;27(2):660-663.

FROM THE PAGE ...

Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), the cause of coronavirus disease (COVID-19), is a zoonotic-origin virus almost exclusively spread among humans; however, some animal species are also susceptible to infection. Cats appear to be among the most susceptible domestic animals, with reports of both clinical and subclinical infections.[1-4] Understanding how this virus behaves in species such as cats is important to assess potential animal and human health consequences of SARS-CoV-2 exposure and infection.

This study involved experimental infection of cats with SARS-CoV-2 using serial sampling to detect presence of the virus in different tissue. Virus isolation was used to detect infectious virus, as opposed to PCR, which can detect viable or nonviable nucleic acids.

Infectious virus was detected in the nasal turbinates and trachea of all cats on day 3 and in most cats on day 6. Virus was not detectable by day 10; this expected short duration of shedding is consistent with infection in humans. Although disease has been reported in naturally infected cats,[5] no cats in this study developed signs of disease, and the virus was not detected in tissues outside the respiratory tract. Although clinical signs were not apparent, there was histologic evidence of inflammation in the upper and lower respiratory tracts, including one cat with severe pneumonia. Lung lesions were still present 28 days after infection.

Susceptibility to reinfection was also investigated. Three cats that were experimentally infected were re-exposed 28 days after initial infection. None developed signs of disease, and infectious virus was not recovered on any sample. Three other cats infected via contact with infected cats were also re-exposed ≈28 days after initial exposure. Similar to the other group, no cats became clinically ill, and infectious virus was not recovered. Although the sample size in this study was small, data suggest that cats develop at least short-term immunity after experimental and natural infection and immunity may reduce or prevent virus shedding after second exposure.

… TO YOUR PATIENTS

Key pearls to put into practice:

1. Cats are susceptible to SARS-CoV-2 infection. Most infections are likely subclinical, but unrecognized inflammation can occur. Short- and long-term consequences are unclear.
2. Infection in cats is of short duration. Elimination of viral shedding typically takes place within 6 days after experimental infection.
3. Infected cats developed immunity that protected them after re-exposure. Duration of immunity is unclear, as it was only studied up to 28 days after initial infection, but this may suggest naturally infected cats are at lower risk for reinfection for at least some time.

References

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