Feline Coronavirus Antibody Tests

Feline coronavirus (FCoV) infection is common; most cats are subclinically affected, but up to 10% develop FIP. Infected cats mount an immune response with detectable antibody levels that decline or may disappear if the cat recovers.

Desirable qualities in an FCoV test include high sensitivity; high specificity; a small sample-size requirement; fast results; ability to determine antibody titer; ability to use effusion in addition to blood, plasma, or serum; and the sensitivity of the test in the presence of virus. A large amount of virus in a sample can reduce or block antibody detection in samples. This study compared 8 FCoV antibody tests for these traits. Four indirect immunofluorescent antibody tests (IFATs), 1 enzyme-linked immunosorbent assay (ELISA), and 3 rapid immunochromatographic (RIM) tests were run on positive (n = 101) and negative (n = 126) samples.

ELISA and RIM tests are available for in-house use. IFATs use cells infected with either FCoV or porcine transmissible gastroenteritis virus (TGEV). Specificity was 100% for all tests except the 2 TGEV IFATs, which were 83.3% and 97.5% specific. Sensitivity was 100% for the ELISA test, 1 TGEV IFAT, and 1 FCoV IFAT; sensitivity for the remaining tests ranged from 64.1% to 98.2%. IFAT and ELISA tests were best for obtaining antibody titers and for samples with virus present. RIM tests provided the fastest results. All tests worked well with effusions. ELISA and 1 RIM test worked best with small sample quantity. FCoV antibody test choice should depend on the goal of testing.

Commentary

This paper examined the attributes of several FCoV antibody tests and possible test applications. Some controversy surrounds clinical application of FCoV antibody testing. Some suggested uses for FCoV antibody testing (eg, testing and excluding potential blood donors that are FCoV-antibody positive, delaying neutering or chemotherapy until a cat becomes FCoV-antibody negative) may not be practical; others (eg, eradicating FCoV from large breeding catteries) may be difficult. Further research is required to better define appropriate clinical uses.—*Lara Boland, BVSc, MANZCVS, DECVIM-CA*

Source

Addie DD, le Poder S, Burr P, et al. Utility of feline coronavirus antibody tests. *J Feline Med Surg.* 2015;17(2):152-162.