# Feline calicivirus

Feline calicivirus (FCV) is a small, non-enveloped, single-stranded RNA virus. Infection is widespread in the feline population. Replication of this virus leads to the evolution of many different strains, which vary in their genetic sequence; this facilitates immune-system evasion. Clinical signs develop 2-6 days following exposure.

## When should I suspect FCV infection in cats?

Clinical signs of FCV infection include pyrexia, oral ulceration, and upper respiratory tract disease. The ulcers begin as vesicles that rupture, often on the tongue, but can be elsewhere in the mouth or nose. The upper respiratory tract disease is often milder than that seen for feline herpesvirus 1. In a small number of cats polyarthritis (transient limping syndrome) is seen.

Chronic FCV infection has been associated with gingivostomatitis in some cats, particularly where there is fauceal involvement or caudal stomatitis.

Rarely, FCV is associated with severe clinical signs (FCV-associated virulent systemic disease). This is highly contagious, even within vaccinated cats, and is associated with a high mortality rate. Cats initially present with subcutaneous oedema, leading to ulceration, severe pneumonia, and multiorgan failure. An infectious disease specialist should be contacted where you are suspicious of this.

## How is FCV infection diagnosed?

Diagnosis of FCV infection has traditionally been by virus isolation from oropharyngeal swabs since the virus grows very well in cultures of feline cells. PCR has superseded the use of culture. The same sample can be submitted for detection of other feline ocular and respiratory pathogens including *Mycoplasma felis*, Feline Herpesvirus 1, and *Chlamydia felis*.

The Molecular Diagnostic Unit uses sensitive and specific reverse transcriptase - quantitative PCR (RT-qPCR) assays to detect a wide range of FCV strains. Reverse transcription is the process by which (viral) RNA is converted to DNA so that it can be detected in the qPCR. The FCV RT-qPCR assays have been tested for their ability to detect a wide range of FCV strains from our diagnostic sample archive to minimise the chance of false-negative results. The assay

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also incorporates several internal amplification controls to ensure that valid results are produced every time.

The potential for a carrier state should be considered when interpreting results. The greater the viral copy number (the lower the CT value) the more likely that FCV is the causative agent of clinical signs. The presence and level of other pathogens should also be considered.

## How is FCV infection treated?

Most treatment is supportive, with fluid therapy, nutritional support (e.g. placement of feeding tubes, use of mirtazapine), ocular lubricants, and antimicrobials (if secondary infection noted). Non-steroidal anti-inflammatory medication can be considered in well hydrated cats with normal renal function. Steroids are contra-indicated.

Mefloquine has been considered for the treatment of FCV-associated virulent systemic disease based on in-vitro studies. No other antivirals have been demonstrated to have efficacy against FCV.

## Is FCV infection preventable?

Feline calicivirus is considered a core component of the feline vaccination schedule.

Cats with infection should be barrier-nursed to limit transmission to others. Due to the potential for carrier status, where cats are housed together (e.g. hospital setting or residential cattery) ‘sneeze barriers’ should be used between cats from different households and examination tables (and gloves) should be cleaned between cats. FCV can survive weeks in dry conditions (usually less than a month). Effective disinfectants include bleach, potassium peroxymonosulfate (Virkon or Trifectant), and some newer ammonium quaternary ammonium agents. Most cats stop shedding within 30 days of infection, but some cats can shed lifelong due to persistence of infection within the oropharyngeal and tonsillar tissue.

More information can be found on the ABCD website: [Feline Calicivirus infection | (abcdcatsvets.org)]

***Updated January 2022 by Dr Emi Barker***