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PROBIC/FAPERGS

## Identification of infectious agents in cats with upper respiratory tract disease during the COVID-19 pandemic

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### Introduction / Objectives

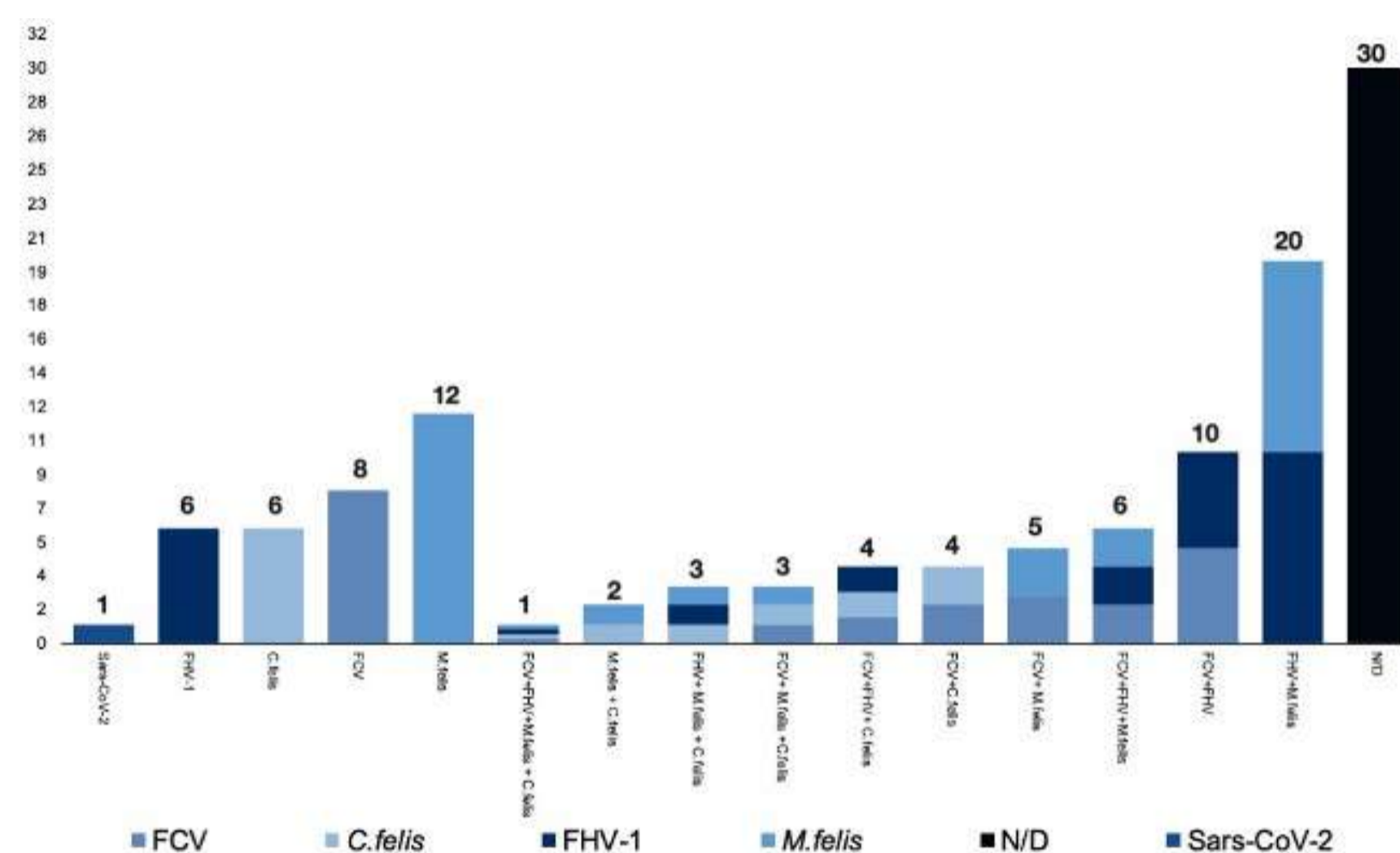
The feline infectious upper respiratory tract disease (URTD), commonly referred as "cat flu", is a disease that causes similar clinical signs in cats to flu or COVID-19 in humans.

It is often caused by viruses such as feline herpesvirus (FHV-1), feline calicivirus (FCV), and/or bacteria, including *Mycoplasma felis* (*M. felis*) and *Chlamydomphila felis* (*C. felis*). Recently, cases of SARS-CoV-2 infection in felines were reported worldwide, bringing discussions and investigations on the susceptibility of cats to this virus.

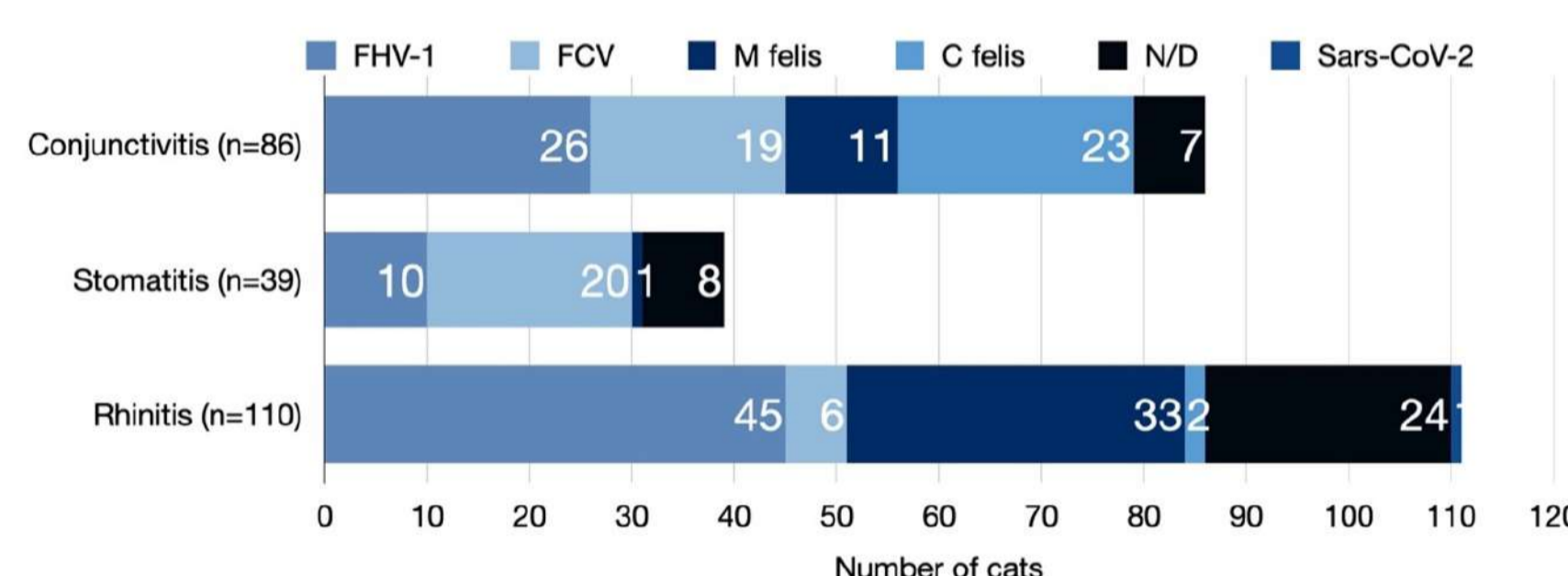
This study investigated the presence of URTD agents in domestic cats, as well as the potential infection by SARS-CoV-2 in felines with compatible URTD clinical signs.

### Results

URTD agents were detected in 90 (75%) of the suspected cats, while 30 felines (25%) were negative. *M. felis* infection was the most prevalent (52 cats, 43.3%), followed by FHV-1 (46, 38.3%), FCV (41, 34.1%), *C. felis* (23, 19.16%), and SARS-CoV-2 (1, 0.83%). Most infected cats had coinfections (58, 64.45%). The presence of FHV-1, *M. felis*, and *C. felis* was associated with conjunctivitis (49, 56.97%), while FCV was associated with stomatitis (20, 51.28%).



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### Materials and Methods



120 Cats with URTD-like clinical signs were analyzed



Cats were selected based on exposure to a positive owner/house member for COVID-19 in up to 15 days



Symptoms were classified according to frequency and severity:

- conjunctivitis
- nasal/ocular secretion
- stomatitis.

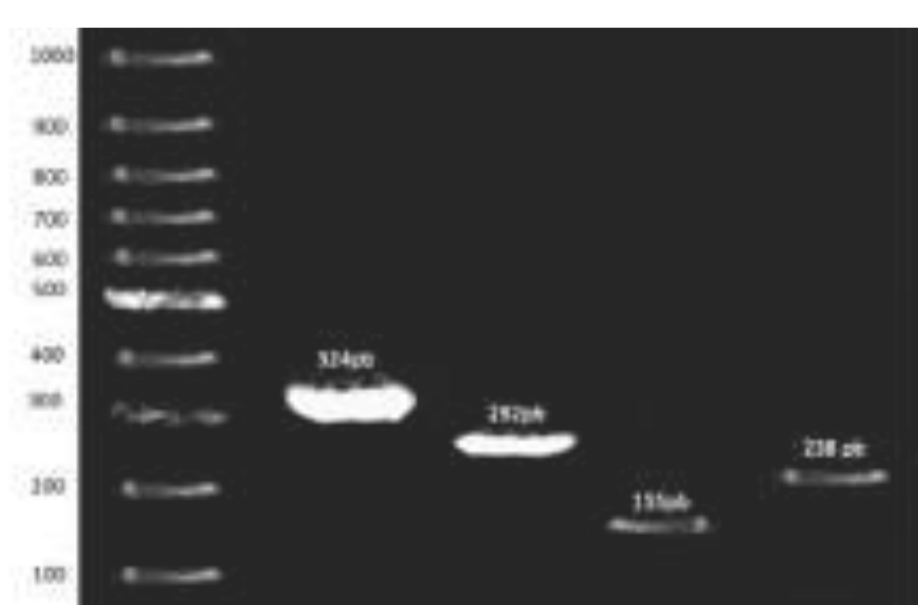


Swabs collected:  
**Nasal, oral and ocular**

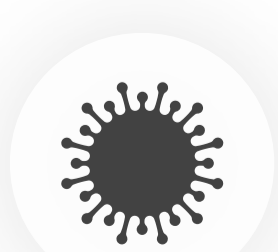


PCR for common URTD agents:

- FHV-1,
- FCV,
- *M. felis*,
- *C. felis*



Samples' nucleic acid was extracted utilizing a silica-based technique (BOOM et al., 1990)  
For all the detection analysis, a positive and negative control for the specific pathogen were used



**Conventional PCR:** FHV, *M.felis* *C.felis*.  
An extra step of reverse transcriptase was executed for FCV detection.  
SARS-CoV-2 RNA detection was conducted by RT-qPCR utilizing high capacity cDNA reverse transcription kit and the CDC's primer-probe sets.

### Final Considerations

The results highlight the common occurrence of URTD in domestic cats caused by infectious agents, with *M. felis* and FHV-1 being predominant. Despite the presence of SARS-CoV-2 was only detected in one cat, infections by this virus in cats are alarming, and it's recommended that infected owners avoid direct contact with their pets to protect them from potential infections.

### References

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