

ISCAID-0-13

Management and outcomes of a virulent systemic feline calicivirus infection outbreak in a veterinary teaching hospital in Belgium

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Highly virulent systemic feline calicivirus (VS-FCV) outbreaks have been reported in multiple countries worldwide, with variable mortality rates and no standardized containment guidelines.

The aim of this retrospective study was to describe the measures taken and the associated outcomes following a VS-FCV outbreak in a veterinary teaching hospital in Belgium.

The index case presented with fever, jaundice, and swollen hindlimbs and was euthanized after 72 hours of unsuccessful supportive care. A second suspected case, which had been in indirect contact with the first, developed right hindlimb swelling and septic shock, succumbing within 24 hours. VS-FCV infection was confirmed via conventional polymerase chain reaction on pooled blood and oropharyngeal swab from the index case.

Following suspicion of VS-FCV, immediate biosecurity measures were implemented based on a previously established institution's crisis protocol. These included isolating affected cats, conducting thorough daily cleaning and disinfection of the entire hospital with sodium hypochlorite, cancelling all cat appointments for one month, and implementing PCR testing, 14-day quarantine, and barrier nursing for hospitalized cats (n=12). Additionally, students, staff, and owners of cats that had visited or been hospitalized during the same period as the index case (n=50) were notified via email, advised to report any signs of illness in their animals, and instructed to limit direct and indirect contact with other cats for one month.

One hospitalized cat was euthanized for reasons apparently unrelated to VS-FCV. The remaining hospitalized cats remained asymptomatic, and all but one tested PCR-negative. The single PCR-positive cat, a stray hospitalized for a wound, exhibited no clinical signs of calicivirus infection and was quarantined separately.

Following email alerts, five cats returned with mild clinical signs consistent with classical calicivirus infection (fever, mild upper respiratory signs, and oral ulceration) after indirect contact with the index case. They were hospitalized in isolation ward with barrier nursing until clinical resolution. Only one cat tested PCR-positive for VS-FCV; others were negative. Additionally, a sixth cat, owned by a student, was reported by email and managed at home.

This study underscores the importance of strict biosecurity protocols in controlling VS-FCV outbreaks in veterinary hospitals. It highlights the necessity of a pre-established action plan to minimize morbidity and mortality and emphasizes the limitations of PCR testing in diagnosing VS-FCV, reinforcing the need for clinical and epidemiological assessment in outbreak management.