

Feline Infectious Peritonitis (Fip)

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Abstract

Feline infectious peritonitis in cats is a severe, immune mediate disease caused by Feline Corona virus, that is one of the leading causes of mortality in cats, it is usually presented in 2 forms Effusive FIP, non-effusive FIP, of which the Effusive FIP is more common compared to non-Effusive FIP which is a chronic form of the disease. Diagnosis of FIP is done by rapid test kits that may give false positive results in some cases.

Key Words: Feline Infectious Peritonitis, Effusive FIP, Non-Effusive FIP.

Introduction

In view of the present scenario of growing cat pet population knowing about various infectious diseases of cat and preventing them plays a key role for the normal health of cats. there are various viral diseases present in cats; they are Feline Pan Leukopenia, Feline Leukemia virus, Feline infectious peritonitis (FIP), and Feline respiratory disease complex. Feline infectious peritonitis is one of the most important infectious diseases as it leads to death in cats.

Etiology

FIP is caused by Feline corona virus (FCoV), belongs to the genus *alphacoronavirus-1*, that includes canine corona virus and porcine transmissible gastroenteritis virus.

Pathogenesis

FCoV virions replicate intracellularly of the host cells by binding to the host surface cell receptors in the cytoplasm. FCoV target primary epithelial cells associated with GI and respiratory tract infections. Viral

genetic factors and host response play a role in clinical manifestation of FIP as a fatal immune mediated multisystemic infection.

Transmission

FCoV is highly communicable and is transmitted by the faeco-oral route or by fomites, also transmitted from infected queens to kittens. Group housing, young or geriatric cats, male cats are at high risk. FCoV is not zoonotic.

Incubation period is variable from days or weeks to months or years.

Morbidity and Mortality

FCov affected cats progressed to FIP the disease is fatal and leads to death.

Hosts: domestic and wild Felidae like cheetah, bob cats, jaguars, leopards, Lions, lynx, sand cats and servals.

Clinical signs

The clinical signs of FIP are variable, it is mainly categorised into 2 forms

Effusive FIP also called as Wet FIP/Non parenchymatous FIP

Non-Effusive FIP or dry FIP / Parenchymatous FIP.

Effusive FIP

Clinical signs are mostly due to vasculopathy that leads to ascites, pleural effusion and pericardial effusion, leading to weight loss, dyspnoea, tachypnea, scrotal enlargement, muffled heart sounds and mucosal pallor and icterus.

Non-Effusive FIP

Chronic manifestation of the disease, occurring weeks to months after initial infection and triggering stress. The clinical signs of non-effusive FIP are due to granuloma formation in organs, signs depend on the organs involved like kidney, liver, intestines, abdominal lymph nodes, brain and eyes. Ocular abnormalities are most common anterior uveitis, iritis that is manifested by the colour change of iris, keratic precipitates in the anterior chamber is detected. Neurological signs vary based on the area of the CNS involved, commonly ataxia, nystagmus, abnormal behaviour, seizures, abnormal postural reflex, circling, head tilt, GI signs of vomiting, diarrhoea, dyspnoea and other respiratory signs are noticed, dermal phlebitis or vasculitis cause nodules or papules that may or may not be associated with pruritic.

Diagnosis

Effusion analysis

Rivalta test: Inexpensive point of care test for FIP, one drop of 98% acetic acid is added to 5 ml of distilled water and mixed thoroughly, and a drop of effusion is layered on top, if drop disappears then test is negative, if the drop retains the shape, attaches to the surface then the test is positive.

Haematologic and Biochemical findings

The typical haematologic change in both effusive and non-effusive FIP is lymphopenia. In non-effusive FIP, a non-regenerative anemia associated with chronic inflammation is evident. FIP is one of the main causes of thrombocytopenia in cats. Serum biochemical changes include increase in serum gamma globulin, increase in total serum protein

Cerebrospinal fluid analysis

In cats with neurological signs of FIP, CSF analysis reveals marked pleocytosis (>100 cells/mcl, mostly neutrophils).

Serological test:

Serum FCoV Antibody titres may not really correlate with the infection status due to the antibody titres that may be developed due to previous infection or due to exposure to FCoV.

Indirect Immunofluorescence

Indirect FA testing is the gold standard for detection of FCoV antibodies as it generates indirect FA titres that correlate well with virus excretion.

Polymerase chain reaction (PCR)

RT PCR is useful for the detection of the virus in various samples of blood, effusion, CSF, aqueous humor.

Treatment

The Effusive FIP treatment consists of Glucocorticoids like Dexamethasone and Prednisolone at sliding doses and Feline Interferon - ω are advised in case of Non-Effusive FIP along with the glucocorticoids, Feline Interferon - ω , polyprenyl immunostimulant is used.

Conclusion

FIP is caused by Feline corona virus and it is one of the leading causes of death in cats. Previously affected cats may act as

carriers of the infection and they may show low grade of infection, FIP can only be detected by PCR, and indirect FA test, treatment consists of the glucocorticoids and other symptomatic therapy, antiviral therapy is still not widely used.

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