

INTISARI

Analisis Cairan Asites Kasus *Feline Coronavirus* dari Beberapa Klinik Hewan di Yogyakarta

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Feline Coronavirus (FCoV) adalah virus beramplop, *single-stranded* RNA, *positive-sense*, dari genus *Alphacoronavirus*, subfamili *Orthocoronavirinae*, famili *Coronaviridae* dalam ordo *Nidovirales*. *Feline Coronavirus* terbagi menjadi dua serotipe yang mampu menyebabkan *Feline Infectious Peritonitis* (FIP). Penyakit FIP merupakan penyakit fatal yang terjadi pada kucing di seluruh dunia. Diagnosis antemortem FIP sulit akibat tanda klinis dan laboratoris yang kurang spesifik. Pemeriksaan cairan asites pada kucing FIP bisa menjadi salah satu pilihan untuk membantu menegakkan diagnosis karena memiliki *viral load* yang lebih tinggi jika dibandingkan dengan pemeriksaan darah. Tujuan penelitian ini adalah mengetahui karakteristik cairan asites kucing yang terinfeksi *Feline Coronavirus*. Penelitian ini menggunakan 9 cairan asites dari 9 ekor kucing yang diduga terinfeksi FIP. Pemeriksaan sampel cairan asites dilakukan meliputi pemeriksaan warna dan konsistensi, pH, berat jenis, *rapid test* antibodi FIP, uji Rivalta, kimia asites (total protein, albumin, globulin, rasio A/G, glukosa, trigliserid), sitologi, kultur bakteri serta uji molekuler *Reverse Transcriptase Nested Polymerase Chain Reaction* (RT-nPCR) untuk konfirmasi adanya gen RNA FCoV. Hasil dianalisis secara deskriptif dan uji *Chi-Square*. Hasil penelitian menunjukkan cairan asites kasus *Feline Coronavirus* pada kucing berwarna kuning jerami, agak kental dan tidak berbau, eksudat dengan berat jenis > 1,025 (100%), pH >7 (100%), total protein tinggi >3,5 g/dL (100%). Hasil uji *rapid test* antibodi FIP menunjukkan 100% positif. Hasil pemeriksaan kimia asites menunjukkan rasio A/G <0,4 (77,8%), glukosa <100 mg/dL (100%), trigliserida <100 mg/dL (77,8%). Hasil pemeriksaan sitologi asites ditemukan adanya sel makrofag, neutrofil dan limfosit. Hasil pemeriksaan kultur bakteri 100% negatif. Hasil uji molekuler RT-nPCR didapatkan 8 dari 9 (88,9%) sampel cairan asites positif FCoV. Disimpulkan bahwa karakteristik cairan asites kucing yang terdeteksi positif FCoV antara lain cairan eksudat dengan berat jenis >1,025; total protein >3,5 g/dL; pH 7-9; rasio A/G <0,4; glukosa <100 mg/dL; trigliserid <100 mg/dL; sitologi asites ditemukan adanya sel makrofag, neutrofil dan limfosit; kultur bakteri negatif, serta FCoV dapat dideteksi dengan metode RT-nPCR dengan target 3'-UTR.

Kata kunci : Asites, Efusi, FCoV, *Feline Infectious Peritonitis*, RT-nPCR

ABSTRACT

Analysis of Ascitic Fluid of *Feline Coronavirus* Cases from Several Veterinary Clinics in Yogyakarta

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Feline Coronavirus (FCoV) is an enveloped, single-stranded RNA, positive-sense virus, of the genus Alphacoronavirus, subfamily Orthocoronavirinae, family Coronaviridae in the order Nidovirales. Feline Coronavirus is divided into two serotypes that are capable of causing Feline Infectious Peritonitis (FIP). FIP is a fatal disease that occurs in cats worldwide. Antemortem diagnosis of FIP is difficult due to non-specific clinical and laboratory signs. Ascites fluid testing in FIP cats may be an option to help establish the diagnosis as it has a higher viral load when compared to blood tests. The purpose of this study was to determine the characteristics of ascitic fluid of cats infected with Feline Coronavirus. This study used 9 ascites fluids from 9 cats suspected of being infected with FIP. Examination of ascitic fluid samples was carried out, including examination of color and consistency, pH, specific gravity, FIP antibody rapid test, Rivalta test, ascites chemistry (total protein, albumin, globulin, A/G ratio, glucose, triglycerid), cytology, bacterial culture, and molecular test Reverse Transcriptase Nested Polymerase Chain Reaction (RT-nPCR) to confirm the presence of the FCoV RNA gene. The results were analysed descriptively and *Chi-Square* test. The results showed the ascitic fluid of Feline Coronavirus cases in cats was straw yellow, slightly thick, and odorless, an exudate with a specific gravity > 1.025 (100%), a pH >7 (100%), and a high total protein >3,5 g/dL (100%). FIP antibody rapid test results showed 100% positivity. The results of the ascites chemical examination showed an A/G ratio <0.4 (77.8%), glucose <100 mg/dL (100%), and triglyceride <100 mg/dL (77.8%). The results of the ascites cytological examination found the presence of macrophage cells, neutrophils, and lymphocytes. The results of the bacterial culture examination were 100% negative. RT-nPCR molecular test results showed 8 out of 9 (88.9%) ascitic fluid samples were positive for FCoV. It was concluded that the characteristics of cat ascites fluid detected positive for FCoV include exudate fluid with a specific gravity >1.025, total protein >3,5 g/dL, pH 7-9, an A/G ratio <0.4, glucose <100 mg/dL, and triglycerides <100 mg/dL; ascites cytology found macrophages, neutrophils, and lymphocytes; negative bacterial culture; and FCoV can be detected by the RT-nPCR method with a 3'-UTR target.

Keywords : Ascites, Effusion, FCoV, *Feline Infectious Peritonitis*, RT-nPCR