Case Report of Persian-Angora Improvement (Suspect Feline Panleukopenia) After IgY and Curcuminoid Supplementation in Indopet_Id Animal Clinic Bogor Indonesia

Case Report of Persian-Angora Improvement (Suspect Feline Panleukopenia) After IgY and Curcuminoid Supplementation in Indopet_Id Animal Clinic Bogor Indonesia

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Abstrak

Panleukopenia merupakan penyakit yang disebabkan oleh parvovirus dan umumnya dikenal sebagai *feline panleucopenia virus* (FPV). Penyakit ini memiliki mortalitas dan morbilitas yang tinggi. Hewan yang belum divaksin menjadi salah satu faktor presdiposisi pada penyakit ini. Persentase mortalitas dapat mencapai 25-90%. Di sisi lain penggunaan antibodi pada kuning telur (IgY) terbukti dapat mencegah infeksi bakteri dan virus. Studi kasus ini bertujuan untuk mengetahui pengaruh pemberian IgY dan kurkumin pada kucing *suspect* FPV. Studi kasus ini menggunakan kucing berumur 9 bulan, ras campuran persia-angora berbulu putih. Pemeriksaan fisik menunjukkan rentang jantung normal, laju pernapasan normal, namun disertai suhu tubuh tinggi (40,1^{0}C). Berdasarkan anamnesis, kucing tersebut menderita anoreksia dan lesu selama hampir 6 hari diikuti diare selama satu hari. Ritme tidur tidak normal, ia tidur pada siang hari hingga pukul 14.00, berlanjut dari pukul 16.00 hingga keesokan harinya. Ia tidak divaksinasi dan tinggal di kandang ganda berisi 3 ekor kucing. Salah satu saudaranya mati karena panleukopenia setelah beberapa hari dirawat intensif di klinik hewan. Oleh karena itu, diagnosis dugaan panleukopenia diterapkan pada kucing tersebut. Kucing tersebut didiagnosis panleukopenia oleh dokter hewan. Terapi dan pengobatan yang disarankan oleh dokter hewan di Indopet_Id Petcare termasuk asupan makanan cair yang banyak disertai larutan gula, dosis ampisilin oral yang tepat (25 mg/kg) selama 5 hari dan satu bungkus Immunobs selama 7 hari. Kesimpulan yang didapatkan setelah pemberian terapi tersebut kondisi kucing semakin membaik, tanda-tanda dehidrasi berkurang, dan tidak ada tanda-tanda diare pada feses kucing.

Kata kunci: panleukopenia, IgY, curcumin, immunobs, ampicillin

Abstract

Felline panleukopenia is a disease caused by parvovirus or commonly known as feline panleukopenia virus (FPV). This disease has high mortality and morbility. Unvaccinated history is one of factor presdipotition to this disease. The percentage of acute mortality can reach 25-90%. In other side, Antibody Egg yolk (IgY) has been shown in several studies to prevent bacterial and viral infections. This case study aims to know the effect of IgY and curcuminoid supplementation to suspect feline panleukopenia cat. This study used the 9 months old cat, a white coat mixbreed of persian-angora cat, had normal range of heart, had normal respiratory rate and had accompanied by elevated body temperature (40.1^{o}C). According to the anamnesis, the cat had been suffered from anorexia and lethargic for almost 6 days followed by one day of diarrhea. Sleep rhythm was abnormal that he had slept during the day until 2 pm, continued from 4 pm to the next day. He was unvaccinated and living in multiple caged contains 3 cats. One of his sibling was dead due to panleukopenia after several days of intensive care at animal clinic. Therefore, diagnosis of panleukopenia suspect was applied to the cat. The cat was diagnosed as a suspect of panleukopenia by the veterinarian. Therapy and medication suggested by the veterinarian in Indopet_Id Petcare including heavy intake of liquid food accompanied by sugar solution, a proper dose of oral ampicillin (25 mg/kg) for 5 days and one

pack of Immunobs® for 7 days. The conclution of this study is after therapy and medication, the cat got better, a sign of dehydration reduce and there is no sign of diarrhea on the cat's feces.

Keywords: panleukopenia, IgY, curcuminoid, immunobs, ampicillin.

Pendahuluan

Felline panleukopenia is a disease caused by parvovirus or commonly known as feline panleukopenia virus (FPV). The usual target this disease are digestive tissue, lymphoid tissue, and bone marrow. In a perinatal infected kitten, it also shows marked development in brain neurons thus may cause cerebellar hypoplasia (Garigliany et al., 2016). Transmission of feline panleukopenia virus occurs through fecaloral route. The virus commonly carried by vomit, nasal and eye discharge, feces, urine and in some cases shoes and cloths. feline panleukopenia virus is known to be resistant to some disinfectants and able to survive in the environment for long period. However, disinfectant containing formaldehyde or sodium hypochlorite (bleaching agent) is effective (Truyen et al, 2009).

This disease has high mortality and morbility, espescially to kitten. Cats which are <12 weeks have high risk. Unvaccinated history is one of factor presdipotition to this disease. The percentage of mortality can reach 25-90%. Meanwhile, if the kitten have unvaccinated the risk can reach 100% (Hartmann, 2017). In other side, the use of antibiotic does not have protective effect to viral infection (Hovind et al., 2024). It is important to find alternative approach to cure viral disease.

The use of IgY as an alternative therapy has become popular in laboratory research since 2006. This is due to several advantages: (1) Making IgY is a method that non-invasive and cheap; (2) Easy animal handling; (3) No need to bleed the animal laboratory; (4) Laying hens are capable of producing more than 20g IgY per year; (5) Eggs are normal food components and no risk of toxic side effects from IgY increasing numbers. Antibody Egg yolk has been shown in several studies to prevent bacterial and viral infections. An example of successful use of IgY prophylaxis is the treatment of disease with IgY antibodies specific against Escherichia coli, Helicobacter pylori, Salmonella spp, Streptococcus mutans, Porphyromonas gingivalis, Pseudomonas aeruginosa, Candida albicans, rotavirus and coronavirus (El-Kafrawy et al., 2023). This case study aims to know the effect of IgY and curcuminoid supplementation to suspect feline panleukopenia cat.

Materi dan Metode

Sample

9 months old cat was a white coat mixbreed of persian-angora. His body weight was 2,3 kg and was examinated in Indopet_Id Petcare. The results of examination that the cat had normal range of heart, had normal respiratory rate and had accompanied by elevated body temperature (40.1^{o}C). According to the anamnesis, the cat had been suffered from anorexia and lethargic for almost 6 days followed by one day of diarrhea. Sleep rhythm was abnormal that he had slept during the day until 2 pm, continued from 4 pm to the next day.

Physical Examination

There was no evidence of mucosal discharge on eye, mouth, and nose. The stool was brownish and less formed, a sign of mild diarrhea. The cat was in lethargic condition that there movement of limbs were not frequently seen. Palpation on the tip of nose and skin elasticity test indicated a sign of mild dehydration. CRT was normal. Mucous membrane was normal.

Diagnosis and Prognosis

Diagnosis the cat was diagnosed by panleukopenia suspect because the cat was unvaccinated and living in multiple caged contains 3 cats. One of his sibling was dead due to panleukopenia after several days of intensive care at another animal clinic. The diagnosis was also conducted based on the result of clinical examination and patient's history with dubius prognosis.

Therapy

Therapy and medication gave heavy intake of liquid food accompanied by sugar solution, a proper dose of oral ampicillin (25 mg/kg) for 5 days and Immunobs® (0,5 ml/kg) for 7 days.

Immunobs contained 3,3% Y antibody and 20% curcuminoid.

Hasil dan Pembahasan

After 7 days of therapy and medication, the cat had normal range of heart, had normal respiratory rate and also had normal body temperature. A sign of dehydration reduced and there was no sign of diarrhea on the cat's feces. The positive result achieved by the cat was occurred due to the intensive care applied by the owner, the medication, and the food or water intake loaded to the cat during the episodes of healing process.

The impact of the medication on the cat general healing process is elaborated as follows:

1. Ampicillin

Long period of lethargic accompanied by dehydration and diarrhea may open great access to bacterial infection in the host body. Ampicillin was prescribed to suppress the growth of bacteria infections like *Escherichia coli*, *Staphylococcus aureus*, *Streptococcus pneumoniae* and *Haemophilus Influenzae* (Basil et al., 2023).

2. Immunobs

There are several studies reported that curcuminoid and immunoglobulin Y (IgY) in Immunobs acts on suppressing gastrointestinal infection. Curcuminoid was known as an agent to reduce inflammation (Urošević et al., 2022) and enhance cellular regeneration (Hamilton et al., 2023). In the case of feline panleukopenia infection, this symptom are fever, gastroenteritis, diarrhea, vomiting, until dehydration. This virus has high mortality rate (Rehme et al., 2022).

In other study, curcumin has positive effect to alleviate inflammatory of colon. It also can increase the immune system by secretion of TNF-α, IL-2, IL-6, IL-12 p40, IL-17, CD2025, CD54, TLR4, CD252, CD256 and CD254 (Zhao et al., 2016). In other side, curcumin can be alternative to prevent cardiotoxic effect and to be anti cardiomyopathy (Millah et al. 2014).

Liver is crucial organ for detoxification of drug metabolites. The promotion of liver function, in the case of gastrointestinal infection, can asisst host body in eliminating drug metabolites and neutralize bacterial toxin that can be produce during the process of gastrointestinal inflammation. In addition, the presence of igY in immunobs acts on reducing the growth of bacteria in the bowel. There
is no specific study indicated that curcuminoid can inhibit feline panleukopenia virus infection, but a study of curcuminoid activity in inhibiting virus infection is available. As it was reported by a study of Zika and Chikunguya infection that curcumin inhibit Zika virus and chikunguya viral infection through inhibition of virus-cellular binding (Murphy et al., 2011). Not only that, a study also reported that curcuminoid can suppress hepatitis-C infection (Mounce et al., 2017).

In addition of curcuminoid, IgY as one of the immunobs active substances also play roles in assist healing. IgY mode of action in gastrointestinal system is characterized by opsonization to induce cellular phagocytosis and inhibition of virus adhesion. A study reported that oral intake of IgY in piglets induced by human rotavirus successfully prevent the development of diarrhea and reduced the amount of virus sheds compared to the negative control group (Anggakusuma et al., 2012).

Kesimpulan

Therapy and medication including heavy intake of liquid food accompanied by sugar solution, a proper dose of oral ampicillin (25 mg/kg) for 5 days and and Immunobs® (0,5 ml/kg) for 7 days successfully assisted the curing process of the panleukopenia suspect.

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Daftar Pustaka

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