

Study of Digestive Tract Diseases in Cats

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ABSTRACT

The cat's digestive tract is one of the vital systems that often facing the deadly diseases. This study aims to identify digestive system disorders/diseases in cats. A total of 100 cats of various breeds and ages with one or more symptoms of digestive disorders was used in this study. All cats were physically examined and many cats followed by fecal and blood examined. The examination results were analyzed to determine the diagnosis. The results showed that digestive system disorders were found in cats, 49/100 (49%) aged 1-6 month-old, 27/100 cats (27%) were 7-12 month-old, 24/100 cats (24%) were > 12 month-old. Moreover, it was commonly found in male (67%) than in female cats (33%). The dominant diseases were gastritis and/or enteritis (61%), stomatitis, glossitis and/or gingivitis (16%), and helminthiasis (14%). The main parasites were gastrointestinal worms including *Ancylostoma* sp, *Toxocara* sp., and *Diphylidium* sp. The rest of the digestive disorders that were slightly found in this study were poisoning (4%), anal prolapse (2%), constipation (1%), mandibular fracture (1%), and tumour (1%). Concluded that the kitten and tom were found to be more susceptible to the digestive tract disorders compared to adult cats and queen. The most cases of digestive tract diseases found in this study were the disorders of the stomach, intestines, and oral cavity, as well as helminthiasis by 91%. Meanwhile, the less cases of digestive tract diseases (9%), were poisoning, prolapse ani, constipation, fractures, and tumours.

Keywords: *Cat, Enteritis, Gastritis, Helminthiasis, Stomatitis*

1. INTRODUCTION

Digestive disorders/diseases are the diseases that can be found in cats, from the mouth, stomach, intestines to the anus. The degree of this disease are varies, from mild, moderate, to severe, and sometimes even lead to death [1-3]. Therefore, it is necessary to have a comprehensive clinical examination and if possible confirmed by laboratory examination. Clinical symptoms that often conveyed by the Cat's owner are anorexia or diarrhea. However, the examination results of the complained area (mouth, stomach, anus) is not parallel with the Owner's conveyed.

Disorders of this system can be caused by infectious or non-infectious agents, that show almost identical

clinical signs. One of digestive disease in cats that widely reported is feline panleukopenia (FPL) which has a high morbidity and mortality rate, even in per-acute conditions it can reach 100% [3-5]. The accuracy of the diagnosis is very important as the basis to determining the accurate and rapid of prognosis and therapy. The accuracy of the diagnosis is strongly influenced by the validity of the patient's examination results which can be obtained by the good examination technique.

The examination of the cat needs to be assessed sequentially started with a clinical physical examination to the further examination to be used as the main reference to determine the initial diagnosis [6]. In addition, the existing disease references need to be constantly updated, to facilitate making a diagnosis based

on the latest data. This study aims to identify digestive system disorders in cats, which is mainly based on the results of a clinical physical examination. The results of this study are very useful, especially as a reference for veterinary practitioners in conducting examinations and comparisons of disease diagnoses, especially in Indonesia.

2. MATERIALS AND METHODS

A total of 100 cats of various breeds and ages showing one or more symptoms of digestive disorders, including anorexia, vomiting, and diarrhea was used in this study. All cats were physically examined including the registration, history, general condition examination by inspection, palpation, and auscultation [6]. Body temperature was measured per-rectally using a body thermometer. The abnormal faeces of the cats were sampled and examined microscopically for the presence of gastrointestinal parasites [7]. Cats that show clinical symptoms towards FPLV infection were collected for its blood samples for total leukocyte examination [8-9]. All examination results were analyzed for determining the basal diagnosis. The data obtained were analyzed descriptively.

3. RESULT AND DISCUSSION

Table 1. Result of digestive system disorders in the male and female cat

Age (Month)	Sex		Sum
	Female	Male	
<7	19	30	49
7-12	10	17	27
>12-60	4	19	23
>60	0	1	1
Total	33	67	100

The results showed that digestive system disorders were found in cats 49/100 (49%) aged 1-6 month-old, 27/100 cats (27%) were 7-12 month-old, 24/100 cats (24%) were > 12 month-old, and more commonly found in male cats (67%) than in females (33%) (Table 1). Young cats under 12 months of age, and especially those <7 months of age suffer more from digestive disorders, possibly related to lower immunity than adults. Kittens are usually vaccinated against several diseases from about 2 month-old and are fully vaccinated at 6 month-old. In addition, it might be because of the young cat's (kitten's) organs are still developing, which will facilitate

the occurrence of infection. Feline panleukopenia virus infection is common in young cats (kitten) because Parvo virus uses a lot of developing cells [2,10].

Digestive tract disorders in this study were mostly found on the male cats (Tom). Although there are no anatomical and physiological difference, Tom are more active and have a wider home range than female cats. According to Hansen [11] male cats have a roaming area of 2 times wider than females. This makes it easy for male cats to be exposed to infectious agents.

The cats in this study may suffered with one or more disease, which might be infectious or non-infectious. Some of the dominant diseases were gastritis and/or enteritis (61%), stomatitis, glossitis and/or gingivitis (16%), and helminthiasis (14%) (Table 2). The results of leukocyte examination of cats with oral inflammation and gastroenteritis were found with 9 cats were suffering leukopenia and 2 were leukocytosis. This disease may be associated with viral, bacterial, fungal, or parasitic infectious agents. Stomatitis, glossitis and gingivitis can be local or systemic disorders. One of the clinical symptoms of feline Calici virus infection is the stomatitis [1,12]. To prove it, further examination with other symptoms (respiratory) and look for the virus need to be conducted. Several infectious agents that have been reported to be associated with enteritis include viral, parasitic and bacterial infections [1,10,13].

The gastrointestinal parasites in this study were worms including *Ancylostoma* sp., *Toxocara* sp., and *Diphylidium* sp., that accordance to the results of other researchers [13-16]. The prevalence of worm infection in cats in Indonesia are varies in each region. The prevalence of helminthiasis in cats in Blitar were 71% at stray cat and 40% at pet cat, in Denpasar 48.8% and Bogor by 53.5% [14,17-18]. The examined cats in Aizawl, Mizoram, India from January 2005 to April, 2009 showed mixed helminthic infections, with an overall prevalence of 85.2% [16].

The less digestive disorders that were found in this study included poisoning (4%), anal prolapse (2%), constipation (1%), mandibular fracture (1%), and tumors (1%) (Table 2). This disorders are non-infectious disease and the occurrence is only individual and not contagious. Mandibular fractures are more likely due to accidents. Anal prolapse (Fig. 1) may be due to excessive straining and/or weakness of the anal *spinchter* muscle which can be followed by infection. An incident of anal prolapse and surgical management was reported by Indra et al. [19]. The presence of a cat that was poisoned in this study indicates that it is possible for the cat to eat food other than the one provided by the owner. As has been reported in dogs and cats in Brazil [20], one possibility of poisoning is caused by cats eating food containing

Table 2. Diagnose results of digestive system disorders in the male and female cat

Age-Month	Sex	GE	Cat Diseases							Sum
			Gingivo-Stomatitis	Helminthiasis	Poisoning	Constipation	Anal Prolapse	Fracture Mandibula	Tumour	
<7	M	17	4	7	1	0	1	0	0	30
	F	16	1	2	0	0	0	0	0	19
07-12	M	7	4	2	3	0	0	0	1	17
	F	8	1	1	0	0	0	0	0	10
>12-60	M	9	6	2	0	1	1	0	0	19
	F	3	0	0	0	0	0	1	0	4
>60	M	1	0	0	0	0	0	0	0	1
	F	0	0	0	0	0	0	0	0	0
Total		61	16	14	4	1	2	1	1	100

organophosphates. This poisoning can cause death quickly, especially if consumed in large quantities or not treated quickly [21]. Therefore, cat owners must be careful in the use of organophosphate poisons to kill both insects and mice. In addition, the owner must immediately take the cat immediately to a veterinarian practice. A cat in this study was suspected of having a tumor, but only based on visual inspection. So that it still needs to be confirmed by further examination, at least a pathological examination.



Figure 1. One of a cats diagnosed as anal prolapse

Concluded that young kittens and male cats suffered more from digestive tract disorders. Digestive tract diseases that are often found are disorders of the stomach, intestines, and oral cavity, as well as helminthiasis by 91%. The rare disease is 9%, namely poisoning, prolapse ani, constipation, fractures, and tumours.

AUTHORS’ CONTRIBUTIONS

SI: Research conceptualization, Investigation, and data collection, data analysis and interpretation, writing and original drafting. Y, AN, SR, HP, IW, SH: Physical examination of cat, supervision, review, and editing. JCD, LPED: Physical and laboratory examination. All authors read and approved the final manuscript.

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