Journal of Parasite Science Vol.5 No.1 March 2021
eISSN : 2656-5331 , pISSN : 2599-0993

Gastrointestinal Parasite Infection on Stray Cat and Pet Cat at Blitar Regency, East Java Province

[1)]Egga Johar Praptanto, [2)]Bambang Purnomo Sunardi, [3)]Budiarto, [4)]Agus Wijaya

[1)]Student, Faculty of Veterinary Medicine, Universitas Airlangga, egga.johar.p2019@fkh.unair.ac.id
[2)]Division of Veterinary Anatomy, Faculty of Veterinary Medicine, Universitas Airlangga
[3)]Division of Veterinary Public Health Faculty of Veterinary Medicine, Universitas Airlangga
[4)]Veterinary Internal Medicine Division, Department of Clinic, Reproduction and Pathology, Faculty of Veterinary Medicine, IPB University
Corresponding author: bambang-p-s-r@fkh.unair.ac.id

Abstract

The purpose of this study was to find out the parasite species and prevalence of gastrointestinal parasite on stray cat and pet cat at Blitar. In an amount of 90 cats feces were collected from two different types of sample, those are stray cat and pet- cat from three sub-districts located at Blitar Regency. Cats feces were analyzed with native, sedimentation and float techniques. The result showed that prevalence of gastrointestinal parasite infection on cat at Blitar was amounted to 71% at stray cat and 40% at pet cat. The parasite that was found in this research are *Toxocara cati*, *Ancylostoma* sp. and *Isospora* sp.

Keywords: Gastrointestinal, stray cat, Blitar regency, pet cat, *Toxocara cati,* prevalence.

Introduction

Parasitic disease is one of the public health problems that is quite serious, including gastrointestinal parasitic infections that are transmitted through cats. The uneven economic level in Blitar City also has a big impact because some pet owners rarely check their pets at clinics or veterinary hospitals. The incidence of diseases caused by digestive tract protozoa is very important considering the wide spread of disease and rapid transmission and some diseases are zoonotic. The closeness between cats and humans facilitates the transmission of diseases that attack cats that can be transmitted to humans are zoonotic. Digestive tract protozoa that are zoonotic in cats include *Giardia*, *Cryptosporidium* and *Toxoplasma gondii* (Shofa'afiyah, 2015). Seeing the prevalence of digestive tract diseases and the high interest in pet ownership, as well as poor sanitation and poor hygiene in some traditional markets that can cause zoonotic parasites (Andayasari, 2011). Until now, there have been no reports of detection of gastrointestinal parasites in cats in Blitar City, indicating that this research needs to be done. The incidence of diseases caused by gastrointestinal parasites is very diverse and needs to be investigated in order to know which cases of gastrointestinal parasites have the greatest incidence, so that it can make it easier for veterinarians or clinical practitioners to provide further treatment. Cats that are kept cannot be separated from infectious diseases, one of which is a parasitic disease that can infect cats, namely *T. cati* worm infection that attacks kittens and adult cats (Estuningsih, 2010). 2005). Infection from *T. cati* can cause problems for human health because *T. cati* is zoonotic. The incidence of toxocariasis often attacks children because they play in sand or soil that already contains infective eggs from *T. cati*. Digestive tract parasites in cats are divided into two, namely protozoa and worms. Protozoa that attack the digestive tract in cats include: *Eimeria* sp., *Isospora* sp., *Entamoeba* sp., *Toxoplasma* sp., *Cryptosporidium* sp., *Trichomonas* sp., and Giarida sp. (Levine; 1995). Worms that can attack the digestive tract in cats include: *T. cati*, *Ancylostoma* sp., *Strongyloides* sp., Dypilidium caninum, *Diphylobothrium latum*, *Heterophyes heterophyes* (Bowman *et al*., 2002). The purpose of this study was to determine the species of gastrointestinal parasites present in wild and domestic cats in Blitar City and to determine the prevalence of gastrointestinal parasites in stray and pet cats.

Materials and Methods

This research has been carried out in Surabaya. For 8 weeks or for 2 months. The material used in this study was the feces of 45 stray and pet cats (a total of 90), of which 45 were divided into three based on the number of sub-districts in Blitar City, so that per sub-district

there were 15 individuals. Samples in the form of fresh feces were taken approximately two grams and then put into a sample pot and then given potassium dichromate or formalin. Each sample pot is labeled. The sample was examined at the Laboratory of the Department of Parasitology, Faculty of Veterinary Medicine, Airlangga University, Surabaya. Research on gastrointestinal parasitic infections in stray and pet cats in Blitar City was carried out using survey research and descriptive analysis. Sampling was carried out randomly or accidentally on stray cats and pet cats in Kepanjen Kidul Sub-District, Sananwetan Sub-District, Sukorejo Sub-District, Blitar City with a total of 90 individuals. The sample used was fresh feces that had just come out of the rectum and then given potassium dichromate and formalin as preservatives and labeled with a marker and then examined at the Parasitology Laboratory of the Faculty of Veterinary Medicine, Airlangga University, Surabaya. The collected samples were examined using native, sedimentation and floating methods. The results are declared positive if gastrointestinal parasites are found in one of the methods used. Key identification by paying attention to the formation of gastrointestinal parasites and matching with references, books or journals (Taylor *et al*., 2016; Levine, 1978).

Data Analysis

This study used descriptive analysis. The results of the identification of this research data were declared positive if the observed fecal samples found the presence of gastrointestinal parasites based on the character and morphology. The prevalence rate of gastrointestinal parasitic infections in cats in Blitar City is calculated based on the following formula:

$$\text{Prevalence} = \frac{\text{The number of positive examined samples}}{\text{The number all examined samples}} \times 100\%$$

The data obtained were analyzed descriptively and presented in tabular form.

Results and Discussion

Laboratory examination using native, sedimentation and floating methods on 90 samples of cat feces taken from several places in Blitar City, East Java, namely markets and cat owners' houses representing three sub-districts in Blitar City, namely Kepanjen Kidul Sub-District, Sananwetan Sub-District and Sukorejo Sub-District. Percentages and Species Gastrointestinal Parasites in Stray Cats and Pets in Blitar City, East Java can be seen in Table 1.

Based on the examination of fecal samples of stray and pet cats in Blitar City, 71% of positive samples and 29% of negative samples in stray cats from 45 samples, while in 45 samples of pet cats obtained 40% positive samples and 60% negative samples. If it is not balanced with a good understanding of the spread of disease, it can increase the risk of disease transmission from animals to other animals or from animals to humans. Coupled with the number of cats that live wild and do not have an employer, so the rate of disease transmission will increase (Gandagusada, 2006). Species found from 45 samples of stray cat feces included 44% positive samples of *T. cati* and 42% positive samples of *Ancylostoma* sp. Meanwhile, from 45 samples of pet cat feces found 31% positive samples of *T. cati*, 29% positive samples of *Ancylostoma* sp., and 2% of samples positive for *Isospora* sp. positive for *Ancylostoma* sp. In Lorenzini *et al*. (2007) research in Brazil from 288 samples there were 5.6% *Isospora* sp. The difference in conditions in the Blitar City area which has air temperatures ranging from 24-34ºC and fairly high humidity is a favorable condition. optimum growth and development of parasites (Hidayat, 2010).

Table 1. Percentage and Species of Gastrointestinal Parasites in Stray and Pet Cats in Blitar City, East Java

	Stray cat	Pet cat	Percentage of Stray Cats	Percentage of Pet Cats
Sub-District Sukorejo	13/15	8/15	87%	53%
Sub-District Sananwetan	11/15	6/15	73%	40%
Sub-District Kepanjen Kidul	8/15	4/15	53%	27%
Toxocara cati	20/45	14/45	44%	31%
Ancylostoma sp.	19/45	13/45	42%	29%
Isospora sp.	0/45	1/45	0%	2%
Positive	32/45	18/45	71%	40%
Negative	13/45	27/45	29%	60%

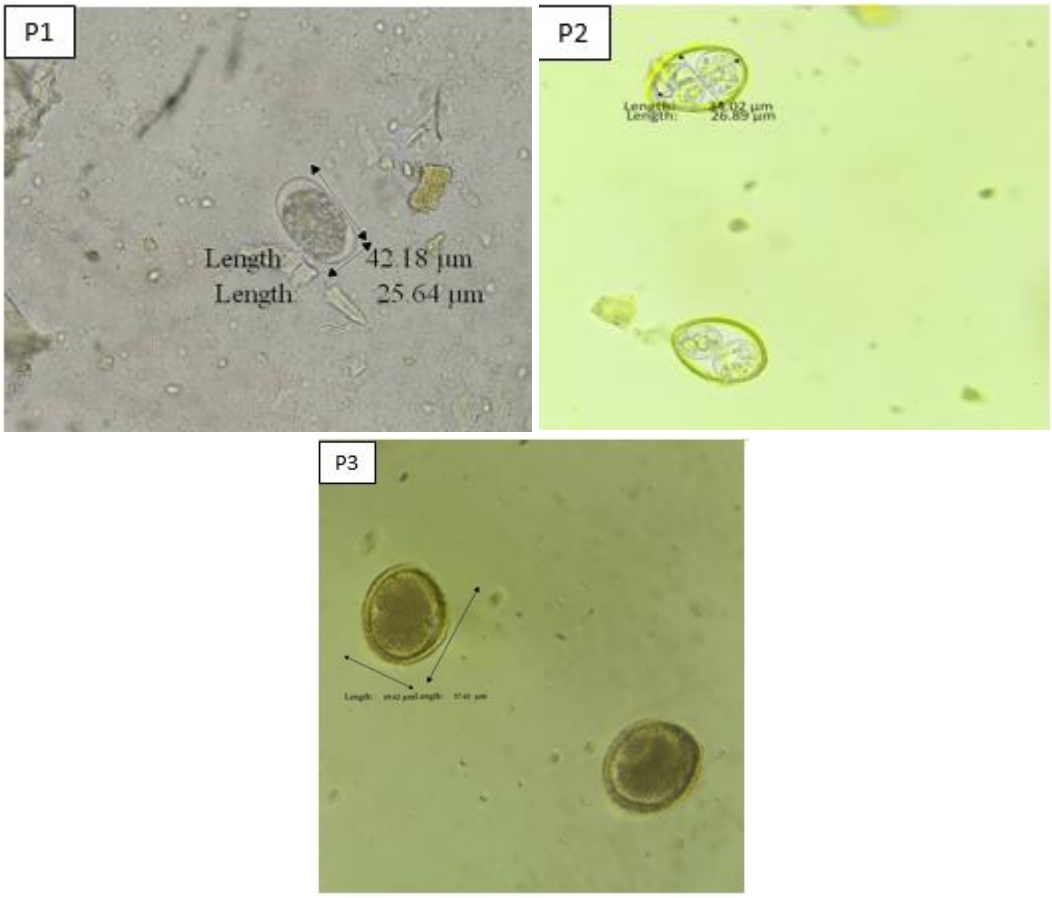

Figure 1. Several gastrointestinal parasites were found at feces of stray cat and pet cat on various areas in Blitar city. P1, *Ancylostoma* sp. egg; P2, *Isospora* sp.; P3, *Toxocara cati*, (400x magnification)

Conclusions

Based on the results of the study, it can be concluded that the gastrointestinal parasitic species in stray and pet cats found in Blitar City were *Toxocara cati*, *Ancylostoma* sp. and *Isospora* sp. The prevalence rate of gastrointestinal parasitic infections in stray and pet cats in Blitar City is 71% of positive fecal samples of stray cats and 40% of positive samples of pet cats.

References

Andayasari, L. 2011. Kajian Epidemiologi Penyakit Infeksi Saluran Pencernaan yang disebabkan oleh Amuba di Indonesia. Media Litbang Kesehatan. 21(1):2-7.

Bowman, D. D., C. M. Hendrix,., D. S. Lindsay, S. C. Barr. 2002. The cestodes in Feline Clinical Parasitology. Iowa State University Press. 183-232

Estuningsih, E.S. 2005. Toxocariasis Pada Hewan Dan Bahayanya Pada Manusia. Balai Penelitian Veteriner. Wartazoa. 15(3):136-142.

Gandahusada, S., Herry D.I., Wita P. 2006. Parasitologi Kedokteran. FKUI. Jakarta.

Hidayat, A. N. 2010. Rancang Bangun dan Desain Sistem Informasi Geografis Profil Daerah Kota Blitar Berbasis Web. Universitas Islam Negeri (UIN) Maulana Malik Ibrahim Fakultas Sains Dan Teknologi Program Studi Teknik Informatika.

Levine, N.D. 1978. Textbook of Veterinary Parasitology. Burgers Publishing Company. Gajah Mada University Press. Yogyakarta.

Levine, N.D. 1995. Buku Pelajaran Parasitologi Veteriner Penerjemah: Gatut Ashadi, Wardiarto, editor. Gajah Mada University Press. Yogyakarta. 38-45.

Lorenzini, G., Tasca. And G.A.D Carli. 2007. Prevalence of Intestinal Parasites in Dogs and Cats Under Veterinary Care in Porto Alerge, Rio Grande Do Sul, Brazil. J. Vet. Res. Anim. 44:1-56.

Oktaviana, P. A., Dwinata, M., dan Oka, I. B. M. 2014. Prevalensi infeksi cacing *Ancylostoma sp*. pada kucing lokal (*Felis catus*) di kota Denpasar. Buletin Veteriner Udayana.

Shofa'afiyah, N. U. R. 2015. Deteksi Protozoa Saluran Pencernaan pada Kucing Peliharaan di Kotamadya Surabaya. Doctoral dissertation. Universitas Airlangga.

Taylor, M. A., R. L. Coop and R. L. Wall. 2016. Veterinary Parasitology. ed. Oxford. Blackwell Publishing.