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RESEARCH ARTICLE

Comparison the incidence of toxoplasmosis in feature samples of cats house and cats market in Sidoarjo City

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Abstract

To determine the comparison of toxoplasmosis in the feces of cats house and cats market in the Sidoarjo City. This method is a direct slide method using a direct preparation using a 2% Eosin solution. The principle of stool examination uses a direct method that uses a microscope to determine stool that is positive for Toxoplasmosis. The results of this research were obtained in the form of primary data, namely the results of a microscope examination. There were 16 fecal samples taken by purposive sampling in the Sidoarjo City. This research was conducted at the Parasitology Laboratory at Universitas Nahdlatul Ulama Surabaya, Surabaya. Cats are animals that are very popular as pets. Cats can transmit zoonotic diseases, namely toxoplasma, which is caused by the Toxoplasmosis parasite. Toxoplasmosis infection is an intracellular parasite from the group of protozoa which is an obligate parasite, where cats act as definitive hosts. Results on the incidence of Toxoplasmosis using feces samples from cats house and cats market found no Toxoplasmosis infection.

Keywords: Cats house, Cats market, Toxoplasmosis.

INTRODUCTION

Toxoplasmosis is a protozoan parasitic infectious disease caused by single-celled protozoa that *Toxoplasma gondii*. The presence of toxoplasma in humans can cause Toxoplasmosis, which is also called a zoonotic disease (Avin, 2018). It is estimated that almost every individual animal, especially cats, can be infected with parasites, one of which is *Toxoplasma gondii*. Cats will excrete Toxoplasma oocysts through their feces and can survive in the soil so they can become a source of infection for other cats, other animals and humans (Rahman and Nur, 2020). In humans, this disease often infects women and pregnant women, but men can also be infected. Toxoplasmosis infection, if it occurs congenitally, can cause babies to experience calcification, choriorethritis, psychological disorders,

microcephaly, hydrocephalus, convulsions and in children after birth it can cause mental disorders (Zakaria and Ardiansyah, 2020).

The World Health Organization (WHO) states that one third or even half of the world's population (±2 billion) suffers from toxoplasmosis. The toxoplasmosis seropositivity rate in each country ranges from less than 10% to more than 90% (Rahman and Nur, 2020). In Indonesia, around 2-51% of the population experiences Toxoplasmosis infection, which is divided into several regions, namely 58% in North Sulawesi, 16% in Palu, 27% in Central Sulawesi, 31% in South Kalimantan, 3% in West Kalimantan, 9% in North Sumatra, 2% in Boyolali, 51% in West Java, 9% in Surabaya, 10-12% in Jakarta (Marthalia and Sulistyorini, 2020).

In research conducted by Zakaria and Ardiansyah, 2020, 7 out of 24 samples of wild cat feces showed positive results for *Toxoplasma gondii*. In pet cat feces samples studied by Sihombing, 2018, 2 samples out of 29 samples showed positive results for *Toxoplasma gondii*. To prevent cats from being infected with *Toxoplasma gondii*, do not give your pets raw or undercooked meat, have your cat's health checked at least once a month by a doctor, clean the cage using an antiseptic every day, and only feed it special cat biscuits (Nurnaningsih, 2017).

The most potential sources of *Toxoplasma gondii* infection are cats and dogs (Avin, 2018). The proximity of humans to cats is one of the causes of transmission of diseases suffered by cats and vice versa (Zakaria and Ardiansyah, 2020). In general, this is because these animals live freely and eat raw meat which contains trophozoites (Avin, 2018).

MATERIALS AND METHODS

Materials

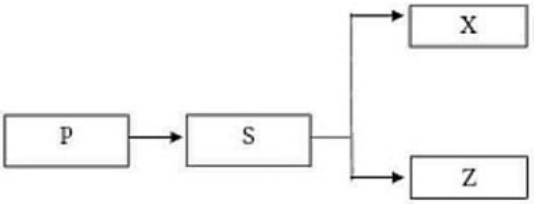
The sample is the object to be studied and is considered to represent the entire population. The samples used in this research were feces from cats house and cats market in the Sidoarjo City.

Data Collection Procedure

Primary data obtained from the survey results of the population of cats house and cats market in Sidoarjo city. several stages of data collection include Editing, to check whether all inspection data are complete, clear and relevant. Coding, to confirm the data to be collected during the study into symbols suitable for analysis. Tabulating, used to present the results of measurements and observations to perform data processing in tabulated form.

The data is entered into data tabulation then the data is analyzed with SPSS. If the data obtained is normally distributed and the independent t-test is an inferential statistical test that determines whether there is a statistically significant difference between the means of two unrelated groups. Then the Wilcoxon signed test was conducted, which is a non-parametric test used to measure the difference between two groups of paired data that are on an ordinal or interval scale but the data are not normally distributed. This test is also known as the match pair test.

Data Analysis Procedure



Description:
P: Population of feces from cats house and cats market S: Stool sample
X: Direct slide inspection
Z: Examination for Toxoplasmosis

The Wilcoxon test is used when the data to be processed is not normal. Before carrying out the Wilcoxon Test. The data will be tested for normality first. If the data is not normal, the Wilcoxon test is carried out. If the value of Asymp. Sig. (2-tailed) is smaller than <0.05, then Ha is accepted. Conversely, if the Asymp. Sig. (2-tailed) is greater than > 0.05, then Ha is rejected. And test normality using the SPSS application.

RESULTS AND DISCUSSION

The results of this research were obtained in the form of primary data, namely the results of a microscope examination. There were 16 fecal samples taken by purposive sampling in the Sidoarjo City. This research was conducted at the Parasitology Laboratory at Universitas Nahdlatul Ulama Surabaya.

Table 1. Microscopic examination of Toxoplasmosis

Sample Code	Category	Result
01	Direct slide	Negative
02	Direct slide	Negative
03	Direct slide	Negative
04	Direct slide	Negative
05	Direct slide	Negative
06	Direct slide	Negative
07	Direct slide	Negative
08	Direct slide	Negative
09	Direct slide	Negative
10	Direct slide	Negative
11	Direct slide	Negative
12	Direct slide	Negative
13	Direct slide	Negative
14	Direct slide	Negative
15	Direct slide	Negative
16	Direct slide	Negative

The descriptive research method with a population of feces samples from cats house and cats market. Each sample consists of 8 samples, which will later be examined for feces to determine whether there is Toxoplasmosis using a direct slide laboratory examination or direct analysis using wet preparations with the help of 2% eosin and Pz solution. Then it is examined under a microscope with a magnification of 10-40x and the examination results are stated.

CONCLUSIONS

Based on the results of comparative research on the incidence of Toxoplasmosis in feces samples from cats house and cats market in the Sidoarjo City, it can be concluded that the incidence of Toxoplasmosis using feces samples from cats house and cats market found no Toxoplasmosis infection. The resulting p value 0.000 < 0.005, it can be concluded that there is no relationship between the incidence of Toxoplasmosis in fecal samples from cats house and cats market in Sidoarjo City.

Author contributions

Indira Zazabilla: Conceptualization, writing draft, writing review, formal analysis and editing; Yauwan Tobing Lukiyono, Andreas Putro Ragil Santoso, Endah Prayekti: Data curation.

Conflict of Interest

There is no conflict of interest in this study.

Acknowledgment

The researcher would like to thank all who contributed to this research.

Data availability

Data related to the findings of this study are available at the corresponding author.

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