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Prevalence of dermatophytosis in cats at Alfa Animal Clinic Banda Aceh

Nanda Yuliansyah[1,2*], Riyan Ferdian[1], Rumi Sahara Zamzami[1], Razali Daud[1], Abdullah Hamzah[1]

[1]*Laboratory of Clinic, Faculty of Veterinary Medicine, Universitas Syiah Kuala, Banda Aceh*
[2]*Alfa Animal Clinic, Banda Aceh, Aceh, Indonesia*
**Corresponding author: nandayuliansyah@usk.ac.id*

Abstract

Dermatophytosis, a significant health issue in cats, is a dermatological condition caused by dermatophyte fungi, primarily involving the genera Microsporum, Trichophyton, and Epidermophyton. This study investigates the prevalence of dermatophytosis in cats at Alfa Animal Clinic, Banda Aceh, from June to November 2023. The prevalence of dermatophytosis varies geographically, influenced by climate, environmental conditions, and owner awareness. This study found a prevalence rate of 1.040% with 51 cases among 490 cats. The research highlights the need for improved hygiene practices, regular veterinary check-ups, and education for pet owners to manage and prevent dermatophytosis. The findings underscore the importance of ongoing surveillance and targeted interventions to control this zoonotic infection, ensuring better health outcomes for the feline population.

Keywords: Parkinson's, Paraquat, Red Palm Oil

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Introduction

Neurological disorders are currently one of Dermatophytosis is a major health issue in cats. Dermatophytosis is a skin disease caused by dermatophyte fungi, which are a type of parasite comprising the genera *Microsporum*, *Trichophyton*, and *Epidermophyton* (Pratama et al., 2023). These three genera produce keratinase necessary for keratinophilia, allowing them to infect the skin, hair, and nails/claws that contain keratin, leading to excessive keratinization (Nadira et al., 2023). Typically, 70% of dermatophytosis cases are caused by *Mycrosporum canis* (Pratama *et al*., 2023), 20% by *Mycrosporum gypseum*, and 10% by *Trichophyton mentagrophytes* (Husna *et al*., 2020).

Clinical symptoms include itching, hair loss progressing to alopecia (Nadira *et al*., 2023), skin lesions appearing as rings or circles with distinct borders (Adzima *et al*., 2013), crust formation on the affected area (Fatmawati *et al*., 2019), crusting, erythema, reduced appetite (Desiandura *et al*., 2023), otitis externa, miliary dermatitis, complex eosinophilic granuloma lesions (Bajwa, 2018), and multifocal crusty lesions in severe infections, often accompanied by secondary bacterial infections (Yulianti et al., 2021).

Diagnostic steps for dermatophytosis include direct examination of fluorescing hair (Moriello, 2014), using a Wood's lamp to detect dermatophyte invasion on the skin and hair surfaces (Indarjulianto et al., 2017), and fungal culture isolation methods (Adzima et al., 2013) with colony-forming units (CFU) counts used to assess dermatophytosis in cats (Moriello, 2014).

The prevalence of dermatophytosis in cats varies based on geographic location, environment, and the affected cat population. In tropical and subtropical regions, prevalence rates tend to be higher due to warm and humid climatic conditions that favor the growth and spread of dermatophyte fungi (Hussain et al., 2021). Studies conducted in several major cities in Indonesia indicate that approximately 15-20% of domestic cat populations are infected with dermatophytosis (Syah et al., 2022). This high prevalence is also influenced by the lack of owner awareness regarding the importance of cleanliness and routine cat care.

Transmission of dermatophytosis in cats can occur through direct contact with infected animals or through environments contaminated with fungal spores. Dermatophyte spores can survive in the environment for months, thus increasing prevalence due to unhygienic conditions (Rizky et al., 2021). Research by Smith et al. (2020) also indicates that cats residing in shelters or farms are at higher risk of infection compared to those living in individual homes.

Prevention and control measures for this disease involve maintaining good hygiene, regular examinations, and appropriate treatment for infected cats. Educating pet owners on how to prevent the spread and the importance of early diagnosis is crucial in reducing the prevalence of dermatophytosis (Ahmad et al., 2019).

This study aims to determine the prevalence of dermatophytosis cases in cats at Alfa Animal Clinic, Banda Aceh. Dermatophytosis is a common fungal infection of the skin affecting pets, particularly cats. Medical records of cats diagnosed with dermatophytosis were collected from June to November 2023.

Research Procedure

The method employed in this research is an epidemiological study using a prevalence test. The prevalence test is used to determine the proportion of cats diagnosed with dermatophytosis during the study period at Alfa Animal Clinic, Banda Aceh. The population in this study comprises all cats visiting Alfa Animal Clinic, Banda Aceh, from June to November 2023. The sample includes cats diagnosed with dermatophytosis based on the clinic's medical records.

The collected data will be analyzed to calculate the prevalence of dermatophytosis in cats during the study period. Prevalence is calculated using the formula:

$$\text{Prevalence} = \frac{\text{Number of cats diagnosed with dermatophytosis}}{\text{Total number of cats visiting the clinic}} \text{ X } 100\%$$

Results and Discussion

Dermatophytosis, commonly known as ringworm, is a significant dermatological concern in feline populations worldwide. The prevalence of dermatophytosis cases in cats at Alfa Animal Clinic Banda Aceh was 1.040% with 51 cases of dermatophytosis out of a total of 490 patients. Various studies have highlighted the prevalence and impact of this zoonotic infection, emphasizing its importance in both veterinary medicine and public health. In Europe, the prevalence of dermatophytosis in cats has been well-documented. According to a study by Cafarchia et al. (2004), dermatophytosis is a widespread issue in European cats and dogs. This study emphasizes the necessity for improved diagnostic and control measures to manage this zoonotic infection effectively. The findings suggest that dermatophytosis is a persistent problem, requiring consistent attention from veterinary practitioners to prevent its spread and ensure animal welfare.

Similarly, a comprehensive review by Dias et al. (2013) highlights the global nature of dermatophytosis and its zoonotic potential. The authors discuss the epidemiology, clinical manifestations, and treatment options for dermatophytosis, underscoring the public health implications of this common fungal infection. Their review indicates that dermatophytosis remains a prevalent issue worldwide, necessitating a coordinated approach to manage and control its spread.

This study also demonstrates that dermatophytosis predominantly occurs in cats with long hair, corroborating the findings of Husna et al. (2020), who reported that Persian breed cats, due to their long and thick hair, have a higher keratin content, making them more susceptible to dermatophytosis. Age is another significant factor contributing to the risk of dermatophytosis. According to Nadira et al. (2023), kittens under four months of age are particularly prone to this infection because

their immune systems are not fully developed.

Dermatophytosis, while associated with low mortality, exhibits high morbidity (Yulianti et al., 2021; Gunawan et al., 2023) due to the economic losses it incurs from hair and skin damage, and occasionally, weight loss (Pratama et al., 2023). The condition is more prevalent in male cats, likely due to differences in sebum composition between males and females. Other contributing factors include the health and stress levels of the cat, the number of spores, environmental hygiene, and genetic predisposition (Husna et al., 2020). Furthermore, contamination and transmission between animals are highly efficient, leading to the persistence of dermatophytosis over the long term (Sofariah et al., 2021).

Overall, the findings from this study underscore the need for continuous research and public health initiatives to manage dermatophytosis in cats effectively. Globally, the zoonotic potential of dermatophytosis presents a considerable challenge, as detailed in the review by Dias et al. (2013). This study delves into the epidemiology, clinical manifestations, and treatment options for dermatophytosis, highlighting its public health implications. The authors stress the importance of awareness and education among pet owners and veterinary professionals to prevent transmission to humans and other animals

In the context of Alfa Animal Clinic, Banda Aceh, the findings from these studies are particularly relevant. The data collected from June to November 2023 indicates a notable prevalence of dermatophytosis in the local cat population. This aligns with the global trends observed in the studies mentioned above. Understanding the local prevalence and epidemiology of dermatophytosis is crucial for developing effective prevention and control strategies tailored to the specific needs of the region. The insights gained from international research can inform local practices, ensuring a holistic approach to managing dermatophytosis in Banda Aceh.

Conclusion

The findings from Alfa Animal Clinic in Banda Aceh indicate a dermatophytosis prevalence of 1.040% among the cat population, with 51 cases identified out of a total of 490 cats during the study period from June to November 2023. This prevalence highlights the significance of dermatophytosis as a health concern in the clinic's cat population. Understanding and addressing the local prevalence is crucial for developing targeted prevention and treatment strategies. These findings align with global studies, emphasizing the need for continuous surveillance, improved diagnostic methods, and effective control measures to manage dermatophytosis in cats, thereby enhancing the overall health and well-being of the feline population in the region.

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