

Original Research Article

Characteristics of dermatophytosis in Nabire, Central Papua, Indonesia

Suspina Pasande*

Nabire Regional General Hospital, Nabire, Central Papua, Indonesia

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***Correspondence:**

Dr. Suspina Pasande,

E-mail: suspinaipasande@gmail.com

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ABSTRACT

Background: Dermatophytosis is a skin infection caused by dermatophytes that infect areas of the body containing keratins such as the skin, hair, and nails. Dermatophytosis is commonly found in Indonesia due to the tropical climate and geographical location. Clinical infection of dermatophytosis is known as tinea. The disease has a chronic nature and may decrease the quality of life of the patients.

Methods: This is a descriptive study conducted at Nabire regional general hospital to identify the characteristics of patients with dermatophytosis registered at Nabire regional general hospital in the period of January 2018 to December 2018. Medical records were used for data collection, and samples were obtained using total sampling technique.

Results: For the period of one year, there were 125 cases of dermatophytosis. Most cases are found in adult age group (72%), female sex (67%), in the form of tinea corporis (32%), and overweight body mass index (48%).

Conclusions: This study concludes that in the period of January 2018 to December 2018, 125 cases of dermatophytosis were reported, with the majority of adult age group, female sex, form of tinea corporis, and often affects overweight patients.

Keywords: Dermatophytosis, Tinea, Nabire

INTRODUCTION

The skin is the outermost organ that is essential and vital because it functions to limit the organs of the human body from the outside environment. Skin is also a reflection of health and life. The skin is very complex, elastic, sensitive and varies depending on climate, age, sex, race and location on the body.^{1,2}

Dermatophytosis is a disease caused by dermatophyte fungi that attack tissues containing keratin/horn substances in the skin, hair and nails. Although this disease is not considered fatal, but due to its chronic nature and resistance to antifungal drugs, this disease can interfere and reduce the quality of life of the patients.^{1,2}

World health organization (WHO) reports the dermatophytosis incidence worldwide of 20%, characterized by cutaneous infection. Most of these cutaneous infection manifest in the form of tinea corporis, followed by tinea cruris, tinea pedis, and onychomycosis.^{3,4}

Due to its tropical climate along with hot temperature and high humidity, Indonesia is one of the countries which favours the growth of fungi the most. In addition, hygiene is considered as one of the most important contributing factors to fungal infection.

In Indonesia, dermatophytosis ranks second as the most common fungal infection after pityriasis versicolor.

Dermatophytosis can be found in 52% of patients with fungal infection, dominated by tinea cruris and tinea corporis.^{3,4}

The aim of the study was to determine the characteristics of patients with dermatophytosis registered at the outpatient department of Nabire regional general hospital in 2018.

METHODS

This retrospective descriptive study aims to study the characteristics of patients with dermatophytosis registered at the outpatient department of Nabire regional general hospital from January 2018 to December 2018. Total sampling technique was used to obtain samples, with the total of 250 samples. This study used medical reports of the patient as samples from secondary dataset. Patients diagnosed with dermatophytosis were used as samples in this study. Variables of age, sex, location of lesions, and body weight were obtained from the dataset. Complete data of patient characteristics as mentioned above were only obtained in 125 patients.

RESULTS

Out of 250 patients with dermatophytosis listed on Nabire regional general hospital medical records, only 125 patients were used as samples. The remaining 125 patients were not used due to insufficient data provided in the medical records. We found that dermatophytosis was more common in age group ≥ 14 years old for 90 patients (72%), with the remaining 35 patients (28%) found in age group < 14 years old consisting 35 patients (28%).

Table 1: Distribution of dermatophytosis based on age group.

Age group (Years)	N	Percentage (%)
Adults (≥ 14)	90	72.0
Children (< 14)	35	28.0
Total	125	100.0

According to sex, dermatophytosis was more commonly found in female consisting of 82 cases (65.6%) compared to male with 43 cases (34.4%).

Table 2: Distribution of dermatophytosis based on sex.

Sex	N	Percentage (%)
Female	82	65.6
Male	43	34.4
Total	125	100.0

Furthermore, we classified patients according to the location of the lesions. As seen on Table 3, dermatophytosis manifested most commonly in the form of tinea corporis with the frequency of 40 patients

(32.0%), and least commonly in the form of tinea facial with the frequency of 7 patients (5.6%).

In addition, we classified patients according to their body mass index. As seen on Table 4, dermatophytosis was most commonly found in overweight patients for 60 patients (48.0%), and least commonly found in underweight patients for 10 patients (8.0%).

Table 3: Distribution of dermatophytosis based on lesion location.

Variables	N	Percentage (%)
Tinea corporis	40	32.0
Tinea cruris	30	24.0
Tinea manus	20	16.0
Tinea pedis	18	14.4
Tinea capitis	10	8.0
Tinea facial	7	5.6
Total	125	100.0

Table 4: Distribution of dermatophytosis based on BMI.

BMI (kg/m ²)	N	Percentage (%)
Underweight	10	8.0
Normal weight	35	28.0
Overweight	60	48.0
Obese	20	16.0
Total	125	100.0

DISCUSSION

In this study, we classified patient with dermatophytosis based on the age group, sex, location of the lesions, and body mass index. We found that dermatophytosis was more common in age group ≥ 14 years old for 90 patients (72%), with the remaining 35 patients (28%) found in age group < 14 years old consisting 35 patients (28%). Our finding is similar to a study conducted in Ethiopia in 2018, in which more than half of patients with dermatophytosis were seen on the age group of ≥ 14 years old.⁵ Similar results were reported by a study conducted in Surabaya, Indonesia in 2018, and in Manado, Indonesia in 2013.^{6,7} These findings indicate that dermatophytosis is more commonly found in the productive age. In addition, the increase of age may also cause the decrease of the immune function of the body. Patients with the productive age also have increased daily physical activities hence are susceptible for sweating which creates a moist environment beneficial for the occurrence of fungal infections.⁵⁻⁷

Dermatophytosis affects both sexes. We found that dermatophytosis was more commonly found in female consisting of 82 cases (65.6%) compared to male with 43 cases (34.4%). Our finding is similar to a study conducted in Ethiopia in 2018, in which dermatophytosis was more commonly found in female (61.6%) compared

to male (38.4%).⁵ Identical results were reported by a study conducted in Surabaya, Indonesia in 2018, and in Manado, Indonesia in 2013.^{6,7} These results are contrary with the literatures which states that adult male are at an increased risk for dermatophytosis. However, these contrary findings may be caused by the imbalance of the samples composition, with no matching of the samples done in these studies. Furthermore, female tend to worry more about the external appearance hence more often gets proper dermatological examination in healthcare facilities.⁵⁻⁷

We also managed to describe the location of the lesions for patients with dermatophytosis. In this study, dermatophytosis manifested most commonly in the form of tinea corporis with the frequency of 40 patients (32.0%), and least commonly in the form of tinea facial with the frequency of 7 patients (5.6%). A study from Ethiopia in 2018 stated different results, in which tinea capitis was the most common manifestation (48.1%), followed with tinea corporis (17.9%), with tinea cruris as least common manifestation (2.5%).⁵ Similar study conducted in Manado, Indonesia in 2013 also showed different results, in which tinea cruris was the most common manifestation found (35.3%).⁷ However, a study conducted in Surabaya, Indonesia in 2018 supports the findings of this study, in which tinea corporis was commonly found (52.7%).⁶ Tinea corporis can affect all surface area of the human body, particularly in less-hygienic adults. This can be further exacerbated with sweat and use of improper clothing.⁵⁻⁷

In this study, dermatophytosis was most commonly found in overweight patients for 60 patients (48.0%), followed by normal weight for 35 patients (28.0%), obese patients for 20 patients (16.0%), and least commonly found in underweight patients for 10 patients (8.0%). Our finding is similar to a study conducted in Turkey in 2017, in which more than half of patients with dermatophytosis were seen on overweight and obese patients.⁸ Patients with excessive fat are susceptible to fungal infection due to the moist environment and entrapment of sweat all across the body.

CONCLUSION

Nabire regional general hospital in Central Papua, Indonesia, records 250 patients with dermatophytosis in 2018. Dermatophytosis was more commonly seen in the age group of ≥ 14 years old, female sex, and overweight patients. The most common manifestation of

dermatophytosis found was tinea corporis. Further studies are still needed to confirm our findings; hence we can study, prevent, and treat the incidence of fungal infections to the locals residing around the area.

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