

Characteristics of Superficial Dermatophylosis Patients at RSUD Dr. H. Chasan Boesoirie Ternate in 2019-2022

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ABSTRACT

Superficial dermatophylosis is the most common fungal skin disease in humans and is caused by dermatophytes and some opportunistic fungi. It is estimated to affect around 20–25% of the world's population, and its incidence is increasing. The purpose of this study was to determine the characteristics of superficial dermatophylosis patients at RSUD Dr. H. Chasan Boesoirie Ternate from 2019 to 2022. This retrospective descriptive study used a proportional random sampling technique based on the population of superficial dermatophylosis patients who met the inclusion and exclusion criteria, and data collection was carried out using medical records. The results showed that, out of the 80 cases, the majority of patients were adults (63%), students (45%), and males (65%). The most common type of superficial dermatophylosis was tinea corporis (34%), and the most frequently administered treatment was combination therapy involving topical antifungals, systemic antifungals, and antihistamines (31%). In conclusion, most cases of superficial dermatophylosis occurred in adult males, with tinea corporis being the predominant type and combination therapy being the most common treatment approach.

Keywords: Characteristics, Skin, Superficial Dermatophylosis, Ternate

INTRODUCTION

The skin is the largest organ of the body and consists of hairy and hairless parts. It has several layers, namely the epidermis, dermis, subcutis, and adnexa (hair follicles, sebaceous glands, sweat glands, and other glands). The histological structure of the skin varies greatly based on its anatomical location. The skin is also complex, elastic, and sensitive, with variations influenced by climate, age, sex, race, and body location. Hairy skin has a thinner epidermal layer, whereas the skin of the nose and the footpads have a thicker epidermis (Anwar, 2017; Hargis & Myers, 2020).

Dermatophylosis is a fungal disease of the skin caused by dermatophytes and some opportunistic fungi such as *Malassezia*, *Cryptococcus*, *Aspergillus*, *Trichosporon*, and *Rhodotorula*, among others. Based on their site of infection, dermatophylosis are divided into three groups, namely: (1) Superficial, which affects the stratum corneum, hair, and nails; (2) Subcutaneous, which affects the skin and/or subcutaneous tissues; and (3) Deep/Systemic, which can spread hematogenously, including opportunistic infections in immunocompromised hosts (Goldsmith et al., 2018).

This fungal infection is differentiated into superficial dermatophylosis and cutaneous dermatophylosis based on tissue reaction (Boyce et al., 2019; Chanyachailert et al., 2023; Howell, 2023; Ma et al., 2021; Reddy, 2017). In superficial dermatophylosis, there is no inflammatory reaction or only mild inflammation, as seen in versicolor pityriasis, *Malassezia*, *pie*dra, and tinea nigra folliculitis—also known as the non-dermatophytosis group. In cutaneous dermatophylosis, even though the affected tissue is not living, an inflammatory reaction occurs due to fungal metabolites produced by dermatophytes, forming what is known as the dermatophytosis group (Djuanda, 2021).

Superficial fungal infections remain common worldwide, and their incidence continues to increase. Superficial dermatophylosis is estimated to affect about 20–25% of the world's population. It is one of the most frequent infections found in humans (Khadka et al., 2016;

Goldsmith et al., 2018).

Data from various public medical education hospitals in Indonesia between 2009 and 2011 showed that the proportion of dermatomycosis among dermatoses was lowest in Yogyakarta (4.06%) and highest in Semarang (26.4%). Data from the Mycology Division of the Outpatient Dermatology and Venereology Clinic (URJ Kulit dan Kelamin) of Dr. Soetomo Hospital Surabaya from 2011 to 2013 showed a prevalence of 5.47% in 2011, 4.91% in 2012, and 5.90% in 2013 (Rosida & Ervianti, 2017).

Fungal infections are also quite common in Indonesia, a tropical country with a hot and humid climate, and where individual hygiene is often suboptimal. Dermatomycosis is very common and can occur in anyone (Melina, 2018). However, it is more prevalent in regions with low socioeconomic status and densely populated environments, where crowding, poor hygiene, and animal contact facilitate transmission (Boyce et al., 2019; Esposito et al., 2023; Osbjør et al., 2015).

Given these issues, this descriptive study was conducted to determine the characteristics of superficial dermatomycosis patients at Dr. H. Chasan Boesoirie Hospital Ternate from 2019 to 2022. The specific objectives were to analyze the distribution of the disease based on age, sex, occupation, type of superficial dermatomycosis, and the therapeutic approaches used.

This research is necessary to provide insights into the management of superficial dermatomycosis, particularly in the North Maluku region. Furthermore, the results of this study are expected to serve as an additional reference for future research and assist healthcare providers in optimizing diagnostic and treatment strategies for superficial dermatomycosis, especially in tropical regions of Eastern Indonesia.

METHOD

Design, Place and Time

The design of this study uses a retrospective descriptive design with the design used as *cross-sectional*. This research was conducted at Dr. H. Chasan Boesoirie Ternate Hospital in March 2023 – April 2023

Number and Method of Taking Subjects

All patients with superficial dermatomycosis at Dr. H. Chasan Boesoirie Ternate Hospital for the 2019-2022 period with a sample number of 80 subjects.

Types and Methods of Data Collection

The type of data taken is secondary data obtained from the medical records of patients with superficial dermatomycosis at Dr. H. Chasan Boesoirie Ternate Hospital in 2019-2022.

Data processing and analysis

The data obtained is then processed with the help of a computer using SPSS and then compiled and presented in the form of a table. The results will be described descriptively and grouped according to the variables studied.

RESULTS AND DISCUSSION

Based on research that has been conducted at Dr. H. Chasan Boesoirie Hospital on March 13 – April 7, 2023, as many as 80 samples were obtained that met the inclusion criteria.

Table 1. Distribution of Superficial Dermatomycosis Patients at Dr. H. Chasan Boesoirie Ternate Hospital in 2019-2022

Variable	Frequency (n)	Percent (%)
Age		
Children (0 - 17)	27	34
Adult (18 -65)	50	63
Middle-aged (66 - 79)	3	4
Jobs		
Work	22	28
Student/Student	36	45
Not Working	22	28
Gender		
Male	52	65
Women	28	35
Types of Superficial Dermatomyocosis		
Candidiasis of Kutis	2	3
Pythiasis versikolor	24	30
Tinea Barbae	1	1
Tinea Facialis	1	1
Tinea Kapitis	3	4
Tinea Corporis	27	34
Tinea Kruris	21	26
Tinea Pedis	1	1
Therapy Options		
Topical Antifungal	17	21
Topical Antifungal + Topical Antibiotic	3	4
Topical Antifungal + Antihistamine	12	15
Topical Antifungal + Systemic Antifungal	23	29
Topical Antifungal + Systemic Antifungal + Antihistamine	25	31
Total	80	100

Source: Medical Record Data of Dr. H. Chasan Boesoirie Ternate Hospital, 2019-2022 (processed data)

Based on age, the incidence of superficial dermatomyocosis is more common in the adult age group (18-65 years), namely 50 subjects (63%) and at least 3 subjects (4%) in middle age. The distribution of work variables in this study was found to be 36 respondents in the student/student group or around 45%, while in the working and non-working groups with a balanced number, each as many as 22 people with presentations of 28% of all respondents. Based on gender obtained The incidence of superficial dermatomyocosis was more common in the male sex group as many as 52 subjects (65%) and in the female sex as many as 28 subjects (35%). Based on the type of superficial dermatomyocosis In this study, the most cases were found in the type of Tinea Korporis as many as 27 respondents or around 34%, while the least cases were found in three types of superficial dermatomicosis, namely Tinea Barbae, Tinea Fasialis, and Tinea Pedis, each as many as 1 respondent or about 1% of all respondents. The results of the study through the medical records of patients with superficial dermatomyocosis based on therapy criteria can be found that the treatment of superficial dermatomyocosis is highest by using therapy topical antifungals, systemic antifungals, and antihistamines with a total of 25 people or 31%. While the least use of therapy is therapy topical antifungals, and topical antibiotics only 3 people or 4% of all respondents.

DISCUSSION

Based on the research that has been carried out on 80 subjects, it was obtained that the age of patients with superficial dermatomyocosis is more occurs in the adult age group (18-65 years), which is 63%. This is in line with research conducted by Harnis, Rusmawardiana and Argentina (2020) which states that the highest incidence of superficial dermatomyocosis is found in the age group of 25-64 years at 17.6%. Same as the results shown by the research Sarada and Kumari, (2015) in India, the age group that experiences the highest incidence of superficial dermatomyocosis is the age group of 31-41 years at 26.4%. In this age group, there are predisposing factors such as activities that can cause a lot of sweating, wet or damp which increases the risk of being infected with superficial dermatomyocosis (Rosida & Ervianti, 2017).

From the findings of the distribution of work variables, it can be seen that the incidence of superficial dermatomyocosis is more common in the Student/Student group, which is 45%. In line with research Harnis, Rusmawardiana and Argentina (2020) which found that the incidence of superficial dermatomyocosis was more common in the student group, which was 26.9%. In line with research conducted by Nayeemuddin *et al.*, (2017) that is, the incidence of superficial dermatomyocosis was found to be the most common in the student/student group of 28.18%. Students/students often do outdoor activities such as exercising and playing, supported by hot weather which makes sweat appear more coupled with poor personal hygiene resulting in easy infection of fungal diseases (Sondakh *et al.*, 2016).

The results of the study on the distribution of sex variables can be seen that it was found that the incidence of superficial dermatomyocosis occurred more in men, namely 65%, and in women by 35%. This is in line with research conducted by Rosida and Ervianti (2017) 53.08% of those who received it were male. In line with research conducted by Khadka *et al.*, (2016) which states that superficial dermatomyocosis is more common in men, which is obtained by 77.5%. It is suspected that men do physical activity more often and are exposed to hot air so that they sweat a lot and make it easier for dermatomyocosis to occur (Adiguna, 2013).

In the variable distribution of superficial dermatomyocosis type, it is shown that the largest number of superficial dermatomyocosis type criteria is Tinea Corporis which is 34%. This is in line with research conducted by Widhiastuti, Handamari and Musy (2023) which gets 22.5%. This can be related to a hot-humid climate (Rosida and Ervianti, 2017). However, it is different from the research conducted by Sofyan and Hikmah Buchair (2022) which shows that the largest number of superficial types of dermatomyocosis is Tinea Kruris, which is 41.05%. These differences are thought to be caused by geographical differences or characteristics of the research subjects, both demographics and behavior, it is also necessary to consider other predisposing factors, such as genetics, hot climate, humidity, personal hygiene, and habits of each individual (Djuanda, 2021; Goldsmith *et al.*, 2018).

Furthermore, in the case of superficial dermatomyocosis based on the choice of treatment therapy which shows that the most treatment therapy option is given topical antifungal + systemic antifungal + antihistamine which is 31%. The research conducted by Sondakh, Pandaleke and Mawu, (2016) The most widely given treatment therapy option for superficial dermatomyocosis was topical antifungal plus antihistamines by 68.6%. This difference is thought to be due to the choice of therapeutic treatment determined by the surface area and severity of the disease, the location of the lesion, the interaction between drugs, the

efficacy of the drug against the disease, price, and accessibility patients to the drug and ease of use of the drug (Harnis, Rusmawardiana and Argentina, 2020; Djuanda, 2021).

CONCLUSION

The highest incidence of superficial dermatomycosis occurred in the adult age group (18–65 years) and was more common among males. The highest incidence was found in the student group, with tinea corporis being the most frequently observed type of superficial dermatomycosis. The most commonly used treatment was combination therapy consisting of topical antifungals, systemic antifungals, and antihistamines. For future researchers, it is recommended to conduct more comprehensive data collection and maintain better documentation to obtain more complete and accurate research results.

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