Lampiran 1

Hasil analisis isi artikel terkait tentang gambaran penderita *Tinea Unguium* pada kuku kaki pasien tahun 2011-2021.

No	Penulis, tahun, dan judul artikel	Sampel	Persentase penderita positif *Tinea Unguium*	Persentase penderita *Tinea Unguium* berdasarkan spesies		
				T. Rubrum	*T. mentagrophytes*	*E. floccosum*
1.	Drakensjo, IT, & Chyeyssanthou, E (2011) "*Epidemiology of dermatophyte infection in stockholm Sweden: a Restropective from 2005 – 2009*".	37.503	sebanyak 5.695 kasus (14,1%) positif *Tinea Unguium*	5.365 (93,4%)	297 (5,4%)	3 (0,1%)
2.	Vena, Gino A (2012) "*Epidemiology Of Dermatophytoses: Retrospective Analysis From 2005 To 2010 And Comparison With Previous Data From 1975".*	6.133	Sebanyak 292 kasus (39,2%) positif *Tinea Unguium* dari total 745 kasus dermatofita	228 (78%)	44 (15%)	14 (4%)
3.	Kawai , Masaaki . *et. all* (2014) "*A Restropective Cohort Study of Tinea Pedis and Tinea Unguium in Patients in a Psychiatric Hospital"*	317	Sebanyak 75 kasus (23,7%) positif *Tinea Unguium*	17 (70,8%)	7 (29,2%)	-
4.	Teklebirhan, Gebreabiezgi (2015) "*Prevelence of Dermatophytc Infwction and the spectrum of Dermatophytes in patient Attending a Tertiary*	305	Sebanyak 156 (51,1%) kasus positif *Tinea Unguium*	4 (8%)	7 (14%)	-

	Hospital in Addis Ababa, Ethiopia".					
5.	Sondakh ,Cyndi E. E. J., *et all (2016)* "Profil Dermatofitosis di Poliklinik Kulit Kelamin RSUP Prof. DR. R. D. Kandou Manado Periode Januari-Desember 2013".	153	Sebanyak 8 kasus (5,4%) positif *Tinea Unguium*	-	-	-
6.	Toukabri, Nourchene., *et. All* (2017) "*Prevelence, Etiology, and Risk Factors of Tinea Pedis and Tinea Unguium in Tunisia".*	485	Sebanyak 268 (55,2%) kasus positif *Tinea Unguium*	163 (60,8%)	-	-
7.	Sharma, Rekha., Luna A., Rukma Lall Sharma (2018) "*Recurrent dermatophytosis: a rising problem in sikkim, a Himalayan state of India".*	192	Sebanyak 30 kasus (15,63%) positif *Tinea Unguium*	4 (6,6%)	24 (40%)	2 (3,3%)
8.	Balamuruganvelu, S., *et. All* (2019) "*Age and Genderwise Seasonal Distribution of Dermatophytosis in a Tertiary Care Hospital, Puducherry, India".*	365	Sebanyak 82 kasus (23%) positif *Tinea Unguium*	5 (6%)	11 (13,4%)	-
9.	Taufiq., Dian Erisyawanty Batubara (2020) "Profil Dermatofitosis di Rumah Sakit Umum Daerah Deli Serdang Tahun 2015 – 2017".	345	Sebanyak 16 (4,6%) kasus positif *Tinea Unguium*	-	-	-

10.	Pradhan, MB. & Paudel, V (2021) "*Clinico-mycological study of dermatophytosis and their antifungal susceptibility, a hospital based study"*	349	Sebanyak 15 (4,2%) kasus positif *Tinea Unguium*	4 (26,6%)	2 (13,3%)

Keterangan:

Format catatan penelitian yang dibuat untuk penelitian kepustakaan adalah sebagai berikut: Artikel dari jurnal ilmiah yang membahas tentang *Tinea unguium*, pada pasien, disebabkan oleh jamur golongan dermatofita dengan penyebab tersering *Tinea unguium* yaitu adalah *Trichophyton mentagrophytes*, *Trichophyton rubrum*, dan *Epidermophyton floccosum*, dan artikel ilmiah yang diterbitkan 10 tahun terakhir.

Lampiran 2

Medical Mycology July 2011, **49**, 484–488

informa
healthcare

Epidemiology of dermatophyte infections in Stockholm, Sweden: a retrospective study from 2005–2009

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Dermatophytic infections are common worldwide but the distribution of dermatophyte species varies among geographical areas and changes over time. The aim of this study was to determine the epidemiologic profile of dermatophytosis in Stockholm, Sweden. Laboratory records comprising direct microscopy and culture results of 37,503 specimens from skin, hair and nail scrapings collected from January 2005 through December 2009 were retrospectively analyzed in the mycology laboratory at Karolinska University Hospital. Onychomycosis had, over time, the highest overall prevalence of 14.1%, followed by tinea pedis (4.4%). *Trichophyton rubrum* was the predominant pathogen isolated from these cases (83.2%), followed by *T. mentagrophytes* (7.4 %). In contrast, *T. violaceum* and *T. soudanense* accounted for 81.6% of the isolates from patients with tinea capitis.

Keywords *Trichophyton, Microsporum, Epidermophyton,* tinea

Introduction

Dermatophytoses are common fungal infections caused by keratinophilic fungi that are capable of invading nail, hair and superficial layers of the skin of humans and animals [1,2]. They produce keratinase enzymes that help the fungi to invade and digest keratin [3]. Forty different species of dermatophytes have been identified and approximately 20 of them are responsible for most of the infections in humans [4]. Dermatophytes are distributed worldwide and it is estimated that they cause 20–25% of superficial mycotic infections [5]. Nowadays, the increase of tourism and immigration influence the distribution of some species and quickly change the epidemiological profile in a determined geographical area [4–6]. This is the first study conducted in Sweden to determine the frequency of different dermatophyte species and the clinical forms of tinea in the County of Stockholm with its two million inhabitants.

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Material and methods

This study was a retrospective analysis of the data obtained from records of the mycology laboratory at Karolinska University Hospital in Stockholm, Sweden of samples processed from January 2005 through December 2009. Specimens were obtained from dermatological units, primary care physicians and private dermatologists in the Stockholm area. A total of 37,503 samples were received during the 5-year study period. Of these 22,176 specimens collected from 20,713 patients were nail clippings or subungueal scrapings and 15,327 specimens, obtained from 13,951 patients, were skin scrapings, scalp scales and hair. Three hundred and seventeen specimens of skin and hair-derived tissues were excluded because the anatomic location was not properly recorded. Since this study was based on laboratory records, it was not possible to distinguish among recrudescence or re-infection relative to specimens received from the same patient. Therefore the number of specimens was not corrected for doubles. The samples underwent direct microscopic examination for detection of dermatophyte hyphae through the use of blankophor-KOH and a fluorescence microscope. Dermatophyte isolates were identified by macroscopic and microscopic observation of cultures on potato-dextrose agar slopes (BD, NJ, USA), Dermatophyte Test Medium and Mycocel agar plates (BD) all of which were incubated at 28°C and checked weekly

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Lampiran 3

NEW MICROBIOLOGICA, 35, 207-213, 2012

Epidemiology of dermatophytoses: retrospective analysis from 2005 to 2010 and comparison with previous data from 1975

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SUMMARY

Dermatophyte infections are extremely frequent worldwide and their epidemiological features vary according to the geographical area and have changed in the last decades. We studied the spectrum of dermatophytoses by means of a retrospective analysis involving 6,133 patients referred to the Mycology Service of the Dermatology Clinic of Policlinico Hospital - University of Bari, Italy during the period 2005-2010. The most frequent clinical forms were tinea unguium (39.2% of the total dermatophytoses), tinea corporis (22.7%) and tinea pedis (20.4%). There was a predominance of women for tinea unguium and corporis and of men for tinea pedis and especially tinea cruris. *T. rubrum* was the prevalent causative agent, implicated in 64% of total cases, followed by *M. canis* (14%) and *T. mentagrophytes* (10%).
The retrospective evaluation of epidemiological data collected at our Clinic since 1975 showed a gradual decrease in the frequency of tinea cruris, tinea corporis, and tinea capitis over time. On the contrary, during the past two decades, there has been a progressive increase in the frequency of tinea pedis and especially of tinea unguium. In parallel with this changing pattern, the frequency of isolation of *T. rubrum* has shown a continuous increase during the last 35 years, whereas a progressive decline of the etiological role of *T. violaceum*, *M. canis* and even more of *E. floccosum* has been noted.

KEY WORDS: Dermatophyte infections, Dermatomycoses, Epidemiology

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INTRODUCTION

Superficial mycoses are among the most frequent forms of human infections, being estimated to affect more than 20-25% of the world's population, and their incidence is constantly increasing (Havlickova *et al.*, 2008). They are predominantly caused by dermatophytes, a group of keratinophilic fungi which can infect the skin, hair and nails. The distribution of dermatophyte infections and their causative agents varies with geographical region and is influenced by a wide range of factors, such as type of population, climatic factors, lifestyle, migration of people, cultural practices and socioeconomic conditions, incidence of peculiar comorbidities and drug therapy (Havlickova *et al.*, 2008; Ameen *et al.*, 2010). Some dermatophyte species appear to be homogeneously distributed worldwide whereas others showed a geographic restriction (Havlickova *et al.*, 2008). The epidemiology of dermatophytoses in developed countries has also exhibited notable changes over the past decades as a consequence of variation in some environmental conditions, and the distribution of the etiological agents usually reflects the changing clinical patterns of dermatophytoses (Ameen *et al.*, 2010).
The aim of the present retrospective study was to analyse the incidence of dermatophytoses and the corresponding causative species among patients attending the Dermatology Clinic of the University of Bari, southern Italy, between 2005 and 2010 and to compare the results with previous data collected at the same Clinic since 1975.

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Lampiran 4

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Original Article

A Retrospective Cohort Study of Tinea Pedis and Tinea Unguium in Inpatients in a Psychiatric Hospital

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ABSTRACT

We conducted a retrospective cohort study on clinical and mycological features of tinea pedis and tinea unguium in psychiatric inpatients in Japan. Of the 317 inpatients (152 with schizophrenia and 165 with depression), 46.1 % had tinea pedis and 23.7% had tinea unguium. Of those with tinea pedis, 48.6% also had tinea unguium. The most common clinical type of tinea pedis was the combination of interdigital type and hyperkeratotic type. The mean clinical score of tinea pedis was 5.9, and that of tinea unguium based on the Scoring Clinical Index for Onychomycosis (SCIO) was 15.8. The main causative species of tinea pedis were *Trichophyton rubrum* (68. 4%) and *T. mentagrophytes* (26.3%). No statistically significant differences were observed in incidence rates of tinea pedis or tinea unguium between men and women or between patients with schizophrenia and those with depression. As for incidence rates by age, patients with depression showed a single peak for tinea pedis and/or tinea unguium in their 50's, while patients with schizophrenia exhibited twin peaks for tinea pedis and/or tinea unguium in their 50's and 70's. Both tinea pedis and tinea unguium tended to become more severe in patients with chronic schizophrenia. Our study suggests that schizophrenia and depression, like diabetes mellitus and HIV infections, should be regarded as risk factors for tinea pedis and tinea unguium.

Key words : tinea pedis, tinea unguium, incidence, psychiatric inpatients

Introduction

Tinea pedis and tinea unguium are the most common dermatophytoses seen in the daily practice of dermatology. According to a report in JAPAN FOOT WEEK 2006, it is estimated that about 1 in 5 Japanese have tinea pedis and that about 1 in 10 have tinea unguium[1]. According to the same report, 49% of the foot diseases of new dermatological outpatients were tinea pedis and/or tinea unguium. Another study indicates that patients with occult athlete's foot account for 25% of all new dermatological outpatients in Japan[2]. If interdigital lesions of tinea pedis are left untreated, severe complications such as phlegmon will develop. Worsening of tinea unguium can cause pain while walking, leading to a significant deterioration of the quality of daily life. Daily foot care is extremely important for patients with underlying diseases, such as diabetes mellitus, renal failure, and immunodeficiency.

Inpatients in a psychiatric hospital may have difficulty in taking care of themselves appropriately, including performing daily foot care. For a variety of reasons, including apathy or lack of interest, a psychiatric inpatient with tinea pedis might not be able to maintain the proper hygiene and foot care necessary to treat the disease, and the condition of the foot could worsen. To our knowledge, however, there are few studies internationally regarding clinical and mycological

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Lampiran 5

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Research Article

Prevalence of Dermatophytic Infection and the Spectrum of Dermatophytes in Patients Attending a Tertiary Hospital in Addis Ababa, Ethiopia

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Background. Dermatophytosis is common worldwide and continues to increase. *Objective*. This study was undertaken to determine the prevalence of dermatophytosis and the spectrum of ringworm fungi in patients attending a tertiary hospital. *Methods*. Samples were collected from 305 patients. A portion of each sample was examined microscopically and the remaining portion of each sample was cultured onto plates of Sabouraud's dextrose agar containing chloramphenicol with and without cycloheximide. Dermatophyte isolates were identified by studying macroscopic and microscopic characteristics of their colonies. *Result*. Of 305 samples, fungi were detected in 166 (54.4%) by KOH of which 95 were dermatophytes while 242 (79.4%) samples were culture positive of which 130 isolates were dermatophytes. Among dermatophyte isolates *T. violaceum* was the most common (37.7%) cause of infection. Tinea unguium was the predominant clinical manifestation accounting for 51.1% of the cases. Patients with age group 25–44 and 45–64 years were more affected. *T. violaceum* was the most common pathogen in tinea unguium and tinea capitis, whereas *T. mentagrophytes* was the most common pathogen in tinea pedis. *Conclusion*. Further intensive epidemiological studies of ring worm fungus induced dermatophytosis which have public health significance are needed.

1. Introduction

Superficial mycoses are among the most frequent forms of human infections, affecting more than 20–25% of the world's population [1]. They are predominantly caused by a group of closely related keratinophilic mycelia fungi (dermatophytes) in the genera of *Trichophyton*, *Microsporum*, and *Epidermophyton*. These groups of fungi invade the stratum corneum of the skin or other keratinized tissues derived from the epidermis such as hair and nails [2, 3].

Although dermatophytosis is considered to be a trivial disease, the psychological effects of the disease are highly considerable and because of its high morbidity, it is a costly disease in terms of loss of working days and treatment [4].

Dermatophytes have been recorded all over the world but with variation in distribution, incidence, epidemiology, and target hosts from one location to another. Geographic location, climate (temperature, humidity, wind, etc.), overcrowding, health care, immigration, environmental hygiene culture, and socioeconomic conditions have been incriminated as major factors for these variations [1, 5].

According to Havlickova et al. [1] and Ilkit [6], the prevalence of dermatophytosis has significantly reduced in many developed nations of the world compared to the developing ones due to improved social, economic, health care, and hygiene practice factors, evident in the former.

Studies that investigated the prevalence of dermatophytosis and its etiologic agents in Ethiopia are few and most of them were carried out on a specific section of a population, that is, school children [7–10], and these studies may not be a true representation of the overall disease pattern of the country. Ethiopia being a developing nation located in the tropic with wet humid climate appears to fell into the category of regions with high prevalence of dermatophytosis.

Lampiran 6

Jurnal e-Clinic (eCl), Volume 4, Nomor 1, Januari-Juni 2016

Profil dermatofitosis di Poliklinik Kulit dan Kelamin RSUP Prof. Dr. R. D. Kandou Manado periode Januari – Desember 2013

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Abstract: Dermatophytosis is a disorder of tissues with keratinized ephithelia e. g. stratum corneum of epidermis, hair, and nails, caused by dermatophyte fungi from *arthrodermataceae* family. This family has more than 40 species divided into three genera: *Epidermophyton, Microsporum*, and *Trichophyton*. The distribution of dermatophytosis is based on its location: *tinea capitis, tinea barbae, tinea cruris, tinea pedis et manum, tinea unguium,* and *tinea corporis*. This study aimed to obtain the profile of dermatophytosis classified by location, age, gender, job and therapy at the Dermatovenerology Clinic of Prof. Dr. R. D. Kandou Hospital Manado during the period of January-December 2013. The results showed that of 4,099 skin disease cases in 2013, there were 153 (3.7%) cases of dermatophytosis with the most frequent found was tinea cruris (35.3%), the age group was 45-64 years old (32.7%), most patients were female (60.8%), commonly housewife (22.9%), and the most treatmen tused was topical therapy (68.6%).
Keywords: dermatophyte, dermatophytosis, tinea

Abstrak: Dermatofitosis merupakan penyakit pada jaringan yang mengandung zat tanduk, seperti stratum korneum pada epidermis, rambut dan kuku, yang disebabkan oleh jamur dermatofita dari famili *arthrodermataceae*. Famili ini terdiri lebih dari 40 spesies yang dibagi dalam tiga genus: *Epidermophyton, Microsporum,* dan *Trichophyton*. Pembagian dermatofitosis berdasarkan lokasinya yaitu tinea kapitis, tinea barbae, tinea kruris, tinea pedis et manum, tinea unguinum, dan tinea korporis. Penelitian ini bertujuan untuk mengetahui profil dermatofitosis di Poliklinik Kulit dan Kelamin RSUP Prof. Dr. R. D. Kandou Manado periode Januari-Desember 2013 berdasarkan klasifikasi lokasi, usia, jenis kelamin, pekerjaan dan terapi yang diberikan. Hasil penelitian menunjukkan bahwa dari total 4.099 kasus penyakit kulit di tahun 2013, terdapat 153 (3,7%) kasus dermatofitosis dengan persentase tertingggi yang diperoleh ialah: tinea kruris (35,3%), golongan umur 45-64 tahun (32,7%), jenis kelamin perempuan (60,8%), ibu rumah tangga (22.9%), dan terapi kombinasi (68.6%)
Kata kunci: dermatofitosis, tinea

Masalah kesehatan masih menjadi perhatian utama di masyarakat. Perkembangan ilmu dan teknologi yang ada saat ini banyak memberi kontribusi dalam bidang kesehatan, namun hal itu tidak mengurangi minat serta perhatian masyarakat terhadap masalah kesehatan. Pemeliharaan kesehatan dapat dimulai dari memperhatikan kesehatan organ tubuh. Kulit merupakan organ yang terletak di sisi terluar tubuh manusia dan menjadi organ yang mendapat pengamatan secara terus menerus baik oleh diri sendiri maupun orang lain. Dalam kondisi sehat, kulit dapat

Lampiran 7

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Research Article

Prevalence, Etiology, and Risk Factors of Tinea Pedis and Tinea Unguium in Tunisia

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Background. Foot mycoses are a frequent disease that represents a public health problem worldwide. *Objectives*. This study aims to evaluate the epidemiology of foot mycoses among Tunisian patients, in order to determine the fungal etiological agents and to identify possible risk factors. *Patients and Methods*. A prospective study of three hundred and ninety-two patients was undertaken during one year (2013-2014). All subjects were asked to collect demographic data related to the risk factors of foot mycoses. A complete mycological diagnosis was carried out on all patients. *Results*. A total of 485 samples were collected; tinea pedis and tinea unguium were confirmed in 88.2% of cases. Dermatophytes were isolated in 70.5% and the most frequent pathogen was *Trichophyton rubrum* (98.1%), followed by yeasts (17.7%) commonly *Candida parapsilosis*. Non-dermatophyte molds (NDMs) were observed in 8.02% cases and *Fusarium* sp. was the freqent genus (29.1%). The main predisposing factors of fungal foot infections were practicing ritual washing (56.6%) and frequentation of communal showers (50.5%). *Conclusion*. This is a recent survey of foot mycoses in Tunisia. Epidemiological studies can be useful to eradicate these infections and to provide further measures of hygiene and education.

1. Introduction

Fungal infections of the feet including tinea pedis and tinea unguium are very common in the general population [1]. Tinea pedis, generally known as athlete's foot, is divided into three clinical forms such as interdigital, plantar (moccasin foot), and vesiculobullous [2]. Interdigital is the most common clinical manifestation characterized by maceration and fissuring of the skin mainly in the space between the toes. Plantar athlete's foot presents with hyperkeratosic and squamous plaques which cover the soles, heels, and sides of the foot. In inflammatory condition vesicles, pustules and sometimes bullae are present on the sole of the foot [3]. Tinea unguium is classified into four clinical types depending on the mode of penetration of the fungus in the nail plate: distal lateral subungual onychomycosis (DLSO); proximal subungual onychomycosis (PSO); white superficial onychomycosis (WSO); and total dystrophic onychomycosis (TDO) [4].

Because of the prolonged period of treatment and the recurrence of infections, foot mycoses are still considered as a major public health problem affecting quality of life [5]. These fungal infections depends on many factors especially lifestyle and environmental and climatic conditions and can be influenced by individual factors such as age and host defenses [6]. Foot mycoses are mainly caused by dermatophytes, sometimes yeasts, and uncommonly by non-dermatophyte molds (NDMs).

Many epidemiological studies have investigated the variability of the frequency of tinea pedis and tinea unguium in different geographical regions [7–11]. In fact, the practice of epidemiological studies at regular intervals is necessary for

Lampiran 8

BRIEF COMMUNICATION

Recurrent dermatophytosis: A rising problem in Sikkim, a Himalayan state of India

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ABSTRACT

Changing pattern of dermatophytic infection among people of Sikkim over the past few years and its recurrence rate has brought a need to do a study on clinical pattern and its recurrence from this part of the country. The objectives of this study are to discern the clinical patterns of dermatophytosis, identification of the isolated fungi to its species level and to see the pattern of its recurrence. The study was carried out from January 2015 to May 2016. A total of 192 samples were collected from the patients with clinical findings of dermatophytic infection. Required history of the patients was taken, followed by clinical examination of the lesions and sample collection. The samples were processed for mycological study till species identification and a follow up of patients were done to assess its recurrence pattern. The age distribution of the patients was from 2 to 80 years. The mean and median age was 30.33 and 33 years respectively. The male female ratio was 1.8:1. Dermatophytosis was noted more commonly in students (n = 64, 33.33%) and jawans (n = 44, 22.92%). Maximum occurrence was noted from April to July (n = 106, 55.20%) and was seen mainly in young Hindu males. Tinea corporis (n = 104, 54.16%) was the most common clinical manifestation followed by tinea unguium (n = 30, 15.63%). *T. mentagrophyte* (40%) was the most common species followed by *T. schoenleinii* (33.3%), *T. tonsurans* (16.6%) and *T. rubrum* (6.6%). The recurrence rate was seen most commonly in clinical cases of tinea faciei 100%, followed by tinea pedis 80% and tinea unguium 46.6%. Overall clinical cure rate was 58.3% and recurrence rate was 34.3%. In the isolated species of dermatophytes, the recurrence rate was 73.68% and that of non-dermatophytes it was 28.07%. Dermatophytosis is an important health problem with high recurrence in Sikkim with difference in the etiological agent from other parts of India.

KEY WORDS: Dermatophytes, Dermatophytosis, Sikkim

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INTRODUCTION

Dermatophytosis, commonly referred as "ringworm," is superficial infection of keratinized tissue caused by organisms of three genera of closely related fungi known as dermatophytes.[1] Dermatophytes are classified into *Epidermophyton, Microsporum*, and *Trichophyton*. Dermatophytes are keratinophilic fungi which are capable of invading the keratinous tissue of living animals.[2] They are characterized by their ability to invade the superficial layers of epidermis, particularly the stratum corneum and the high keratin concentration containing appendages, the hair and nails of a living host. Infection is generally cutaneous and restricted to the nonliving cornified layers because of the inability of fungi to penetrate the deeper tissues or organs of immunocompetent hosts.[3,4]

Reactions to a dermatophytic infection may range from mild to severe as a consequence of host's reactions to the metabolic products of the fungus, virulence of the infecting strain or species, anatomic location of the infection, and local environmental factors. Dermatophytosis is one of the most common diseases in human beings. Although it does not cause mortality, it causes high morbidity and worsens the quality of patients' life. The prevalence of this disease is governed by environmental conditions such as high humidity, personal hygiene, and individual's susceptibility from place to place. The seasonal variation in dermatophytosis is also noted with increased number of cases reported in summer months. Today, we are facing an onslaught of chronic and recurrent dermatophytosis in volumes never encountered previously.

Although some studies on clinico-mycological aspects of dermatophytosis have been reported from different parts of India, no

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Lampiran 9

Original Article

DOI: 10.7860/JCDR/2019/39515.12615

Dermatology Section

Age and Genderwise Seasonal Distribution of Dermatophytosis in a Tertiary Care Hospital, Puducherry, India

S BALAMURUGANVELU[1], SREENIVASALU V REDDY[2], GEETHAVANI BABU[3]

ABSTRACT

Introduction: Superficial infections of skin, hair and nail are caused by dermatophytes due to its high affinity towards keratinized layers. Dermatophytosis is a progressing infection with an outer ring of active lesion and central healing. In recent years there is a worldwide increase in people getting affected by dermatophytic infections mainly due to increase in number of immunocompromised patients and widespread use of broad spectrum antibiotics.

Aim: The present study was designed to investigate the age and genderwise seasonal prevalence of dermatophytosis visiting the tertiary care hospital, Puducherry.

Materials and Methods: A total of 356 samples which comprises of 206 skin scrapings, 82 nail clippings and 68 hair samples were collected from 356 patients clinically suspected with dermatophytosis. The materials were subjected to direct microscopy (KOH mount) and cultured on to Sabouraud's dextrose agar slopes and dermatophyte test medium for selective isolation of dermatophytes. A pre-structured questionnaire was designed to collect various socio-demographic profiles from the study population to assess the age and genderwise seasonal distribution of dermatophytosis. Frequency distribution was performed for analysis of results.

Results: Dermatophytosis was found to be more prevalent in males 223 (62.6%) compared to females 133 (37.4%) with male to female ratio being 1.67:1. Tinea corporis was the common clinical presentation in males 71/223 and Tinea unguium was common in females 58/133. Maximum number of cases affected with dermatophytosis was in the age group 21 to 30 years, 98 (27.5%), with least number of cases 27 (7.6%) in above 50 years. *Trichophyton mentagrophytes* was the major isolate from hair and nail specimens 14/18 and 11/23 respectively, whereas *Trichophyton rubrum* was the common isolate from skin scrapings 41/98. Maximum prevalence 127 (35.8%) of dermatophytosis cases was recorded during the summer months April to June.

Conclusion: Skin infection being the most common clinical presentation followed by nail and hair infection. Though all ages were found susceptible, dermatophytosis was more common in 3rd decade of life. Males predominated in all clinical types except in cases with Tinea manuum and Tinea unguium females predominated. Dermatophytosis was reported in all seasons, since Puducherry's climatic condition is hot and humid all through the year which serves best for dermatophytes to establish an infection with increased prevalence during the months of April to June. Hence the present study emphasises that the population at risk in this locality needs to be awakened regarding the protective measures to cut down the prevalence.

Keywords: Dermatophytes, Seasonal prevalence, Skin scrapings, Tinea infection

INTRODUCTION

Cutaneous infections in man have become a public health problem affecting all age groups especially of tropical wet regions, where moisture plays an important role in growth of the fungi [1]. Millions of cutaneous fungal infections are observed in humans annually in which dermatophytosis ranks the first with about 10-20% of the population is affected by dermatophytes worldwide [2,3]. *Epidermophyton*, *Microsporum* and *Trichophyton* are the three main genera of dermatophytes that cause dermatophytosis. The different species of dermatophytes that are responsible for most human infections include *Trichophyton rubrum*, *Trichophyton mentagrophytes*, *Trichophyton verrucosum*, *Trichophyton violaceum*. *Trichophyton tonsurans*, *Epidermophyton floccosum*, *Microsporumaudouinii*, *Microsporumcanis*, *Epidermophyton floccosum*, *Microsporumgypseum* [4,5]. Dermatophytes due to its high affinity towards keratinized layers of skin, hair and nail causes superficial infections in both man and animals [6]. There has been a striking rise in the incidence of dermatophytes due to increase in number of immunocompromised patients and wide spread use of broad spectrum antibiotics [7,8]. Dermatophytes possess affinity for keratinized tissue, invade these tissues by keratinases, which produce dermal inflammatory response with burning, intense itching and redness which is mainly of cosmetic importance [6]. Dermatophytosis or Tinea infections caused by dermatophytes such as *Epidermophyton*, *Microsporum* and *Trichophyton* commonly called as ringworm is a progressing infection with an outer ring of active lesion and central healing. Dematopyhtic conditions ranges from mild to severe. The severity of infection also varies from chronic to high inflammatory lesions based on variety of factor such as site of infection, causative agent, etc., High prevalence rate of skin infection especially Tinea has been strongly linked to low socio-economic conditions [1,3,9]. Poor hygiene among low socio economic group, environment and climatic conditions plays a vital role in causing the infection. Early diagnosis and identification is the key for prevention and treatment of dermatophytosis among such population [10]. The prevalence of dermatophytosis also varies based on other factors such as type of population, individual's susceptibility, life style and cultural practices. India being a sub-continent with varied topography situated in the tropical and sub-tropical regions supports the growth of especially dermatophytes. Studies have shown, there is vast difference in isolation of different species of dermatophytes from different parts of India and it varies based on the geographical pattern [11]. Although reports published so far unequivocally shows *Trichophyton rubrum* to be the most common dermatophyte isolated. Few reports have shown *Trichophyton mentagrophytes* and *Trichophyton violaceum* as the predominant dermatophyte.

Lampiran 10

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PROFIL DERMATOFITOSIS DI RUMAH SAKIT UMUM DAERAH DELI SERDANG TAHUN 2015 - 2017

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ABSTRACT

Dermatophytosis is a superficial fungal infection of tissues containing horn substances such as the stratum corneum of the skin, hair and nails. Dermatophytosis infections are caused by dermatophytic fungi. Dermatophytosis is the biggest skin problem in the world, especially in developing countries. This research objective is to explain the profile of dermatophytosis in Deli Serdang Regional General Hospital in 2015-2017. Penelitian ini merupakan penelitian deskriptif retrospektif. This research method is a retrospective descriptive study. Results: Based on the results of the study, the most cases of dermatophytosis in 2015-2017 based on the classification according to location are tinea corporis, for female sex more than men, for the most variable age cases in 2015 occurred at the age of 45-64 years, 2016- 2017 most at the age of 25-44, based on the most patient in this case is housewife , the common treatment is a combination of systemic anti fungal, topical anti-fungal and anti-histamine. The most cases of dermatophytosis are tinea corporis, dermatophytosis most commonly affects the age of group 45-64, the most genderoften affected by dermatophytosis is women compared to men, dermatophytosis most commonly affects housewives, for the treatment of more dermatophytosis patients treated with combination therapy (systemic + topical) with anti-histamine.

Keywords: Dermatophyte, Dermatophytosis, Tinea

PENDAHULUAN

Dermatofitosis merupakan infeksi jamur superfisial pada jaringan yang mengandung zat tanduk seperti stratum korneum kulit, rambut dan kuku. Infeksi dermatofitosis disebabkan oleh golongan jamur dermatofita. Mekanisme infeksi dermatofit adalah perlekatan dermatofit pada keratin kemudian penetrasi melalui dan di antara sel sampai terbentuknya respon penjamu. Patogenesis dermatofitosis tergantung pada faktor-faktor seperti faktor lingkungan, antara lain iklim yang panas, higiene perseorangan, sumber penularan, penggunaan obat steroid, antibiotik, sitostatika, imunogenitas, kemampuan invasi organisme, lokasi infeksi dan respons imun dari pasien. Infeksi penyakit yang disebabkan oleh jamur dapat ditemukan hampir di seluruh daerah Indonesia, karena Indonesia merupakan wilayah yang baik untuk pertumbuhan jamur. Iklim dan kondisi geografis di Indonesia memudahkan untuk pertumbuhan jamur sehingga menyebabkan banyaknya kasus infeksi jamur. Di Indonesia, dermatofitosis merupakan 52% dari seluruh dermatomikosis dan tinea kruris dan tinea korporis merupakan dermatofitosis terbanyak. Dermatofitosis sendiri merupakan masalah kulit terbesar di dunia terutama di negara-negara berkembang. Berdasarkan urutan kejadian dermatofitosis, tinea korporis (57%), tinea unguinum (20%), tinea kruris (10%), tinea pedis dan tinea barbae (6%) dan sebanyak 1% tipe lainnya. Insiden penyakit dermatofitosis di berbagai rumah sakit pendidikan dokter di Indonesia menunjukan angka yang bermacam-macam. Di RSUD dr. Soetomo Surabaya 53.9% kasus dermatofitosis pada tahun 2010. Di RSUP Dr. Kariadi Semarang pada tahun 2010 menyatakan dermatofitosis merupakan 73.4% dari seluruh dermatomikosis. Rumah Sakit Dr. Wahidin Sudirohusodo Makasar melaporkan terdapat 69.33% kasus baru dermatofitosis untuk periode tahun 2006-2010. Data menunjukkan dermatofitosis merupakan penyakit kulit yang menduduki urutan pertama dibandingkan penyakit kulit yang lain di RSUP H. Adam Malik dan RSUD dr. Pirngadi Medan pada tahun 2002. Dalam hasil penelitian yang dilakukan oleh Ardhiah Iswanda Putri dan Linda Astari pada tahun 2013 di Divisi Mikologi URJ Kesehatan Kulit dan Kelamin RSUD Dr. Soetomo Surabaya tahun 2011 sampai dengan 2013 data menunjukkan bahwa dermatofitosis terbanyak adalah tinea korporis (51%) dan ditempat kedua adalah tinea kruris (41%). Dalam penelitian tersebut dikatakan bahwa tinea kruris menjadi yang terbanyak diantara semua dermatofitosis.

Lampiran 11

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Clinico-mycological study of dermatophytosis and their antifungal susceptibility, a hospital based study

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Abstract

Introduction: Dermatophytosis refers to superficial fungal infections of keratinized tissues caused by keratinophilic dermatophytes. It is the most common of the superficial fungal infections. Nowadays, these fungal infections are at a rise and run a prolonged course despite of treatment due to resistance to conventional antifungal agents. There is a felt need to conduct an epidemiological studies to know the change in the pattern and causes of widespread resistance.

Objectives: This study was aimed at identifying clinico-mycological patterns of dermatophytic infections in patients attending the dermatology outpatient department of a tertiary care hospital in Birgunj and the adjoining areas.

Materials and Methods: The study included cases of clinically diagnosed dermatophytosis from the outpatient department of Dermatology of National Medical College, Birgunj. Clinical and epidemiological data were collected as per proforma and skin scraping, hair plucking, and nail clipping were done and materials were examined microscopically by KOH mount then cultured on Sabouraud dextrose agar and antifungal susceptibility were done by disk diffusion test.

Results: There were 349 patients recruited in the study, with a male: female ratio of 1.6:1. The most commonly affected age group was 20–29 years (27.3%). Tinea corporis was the most common type observed (38.1%). Potassium hydroxide positivity was seen in 228 samples (65.3%) and culture positivity was found in 202 samples (57.9%). The most common species identified was *Trichophyton rubrum* (55%). The most sensitive drug was itraconazole, and more number of resistances was noted with fluconazole.

Conclusion: Dermatophytic infection is ecumenical in distribution with increased frequency in tropical and subtropical countries with variable epidemiology. Inadequate and irregular use of antifungal drugs has led to the emergence of resistant strains, which cause poor treatment outcomes. Thus, it is essential to test for antifungal sensitivity to check for resistance to antifungals.

Key words: Antifungal Agents; Dermatomycoses; Tinea; Trichophyton rubrum

Introduction

Dermatophytes are fungi that cause superficial infections of the skin, hair, and nails that require keratin for growth. Dermatophytosis is commonly referred to as ringworm. Dermatophytes spread by direct contact from other people (anthropophilic), animals (zoophilic), and soil (geophilic), as well as indirectly from fomites. *Microsporum, Trichophyton*, and *Epidermophyton* species are the most common pathogens causing dermatophytic infection of hair, nail and skin.[1] Clinically, tinea can be classified according to the site of involvement including tinea capitis, tinea corporis, tinea cruris, tinea pedis, tinea barbae, tinea manuum, tinea faciei and tinea unguium.[2] The prevalence of superficial dermatophytic infections affects more than 20-25% of the world population and is one of the most frequent forms of infections.[3]

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Conflict of Interest: No

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Lampiran 12

KARTU KONSULTASI KTI

Nama Mahasiswa : Diyah Ayu Oktafiani

Judul KTI : Gambaran Penderita *Tinea Unguium* pada Pasien (Studi Pustaka).

Pembimbing Utama : Yustin Nur Khoiriyah, S.Si,. M.Sc

No	Kegiatan	Paraf
1.	Kamis, 7 Januari 2021, Revisi bab 1, 2,3	
2.	Selasa, 12 Januari 2021, Revisi bab 1,2,3	
3.	Kamis, 14 Januari 2021, Revisi bab 1,2,3	
4.	Acc Seminar Proposal	
5.	Rabu, 14 April 2021, Revisi bab 1,2,3	
6.	Jum'at, 16 April 2021, Revisi bab 1.2, 3	
7.	Acc jilid proposal	
8.	Rabu, 9 Juni 2021, Revisi bab 4,5	
9.	Jum'at, 11 Juni 2021, Revisi bab 4,5	
10.	Jum'at, 18 Juni 2021, Revisi bab 4,5	
11.	Selasa, 22 Juni 2021, Revisi bab 4,5	
12.	Jum'at, 25 Juni 2021, Revisi bab 1,2,3,4,5	
13.	Jum'at, 2 Juli 2021, Revisi bab 1,2,3,4,5	
14.	Acc Seminar Hasil	
15.	Jum'at, 6 Agustus 2021, Revisi bab 4,5	
16.	Senin, 9 Agustus 2021, Revisi cetak	
17.	Acc Cetak	

Ketua Prodi TLM Program Diploma Tiga

Misbahul Huda, S.Si., M.Kes

NIP. 196912221997032001

Lampiran 13

KARTU KONSULTASI KTI

Nama Mahasiswa : Diyah Ayu Oktafiani

Judul KTI : Gambaran Penderita *Tinea Unguium* pada Pasien (Studi Pustaka).

Pembimbing Pendamping : Dra. Eka Sulistianingsih, M.Kes

No	Kegiatan	Paraf
1.	Selasa, 5 Januari 2021 Revisi bab 1,2,3	
2.	Kamis, 14 Januari 2021 Revisi bab 1,2,3	
3.	Jum'at, 22 Januari 2021 Acc Seminar Proposal	
4.	Jum'at, 9 April 2021 Revisi bab 1,2,3	
5.	Jum'at, 15 April 2021 Revisi bab 1,2,3	
6.	Jum'at, 30 April 2021 Acc	
7.	Senin, 14 Juni 2021 Revisi bab 4,5	
8.	Selasa, 22 Juni 2021 Revisi bab 4,5	
9.	Senin, 12 Juli 2021 Revisi bab 1,2,3,4,5	
10.	Senin, 19 Juli 2021 Acc Seminar Hasil	
11.	Kamis, 22 Juli 2021 Revisi cetak	
12.	Senin, 26 Juli 2021 Acc Cetak	

Ketua Prodi TLM Program Diploma Tiga

Misbahul Huda, S.Si., M.Kes

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Gambaran Penderita *Tinea Unguium* pada Pasien (Studi Pustaka)

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Abstrak

Tinea Unguium adalah kelainan lempeng kuku yang disebabkan oleh infeksi jamur dermatofita, dan paling sering menginfeksi manusia salah satunya pada pasien. Kuku yang terinfeksi menjadi lebih tebal, kuku pecah-pecah, tidak rata, tidak mengkilat dan terjadi perubahan warna lempeng kuku menjadi putih, kuning, coklat hingga hitam, lama kelamaan akan menjadi hancur dan rapuh. *Tinea unguium* biasanya disebabkan oleh spesies *Epidermophyton floccosum*, *Trichophyton rubrum, Trichophyton mentagrophytes*. Penelitian ini bertujuan untuk mengetahui persentase penderita *Tinea Unguium* pada pasien dan persentase berdasarkan spesies jamur dermatofita. Jenis penelitian yang digunakan adalah studi pustaka. Hasil penelitian studi pustaka ini didapatkan : persentase hasil pemeriksaan terhadap penderita Tinea Unguium pada pasien dilaporkan sebanyak 4,2% - 55,2%. Persentase hasil pemeriksaan terhadap spesies jamur penyebab *Tinea Unguium* pada pasien dilaporkan sebanyak : *Trichophyton rubrum* 6% – 93,4%, jamur *Trichophyton mentagrophytes* 5,2% - 40%, dan jamur *Epidermophyton floccosum* 0,1% - 4%.

Kata kunci : *Tinea unguium*, pasien

Overview of *Tinea Unguium* Patients in Patients (Library Study)

Abstract

Tinea Unguium is a nail plate disorder caused by a dermatophyte fungal infection, and most often infects humans, one of which is in patients. Infected nails become thicker, cracked nails, uneven, not shiny and changes in the color of the nail plate to white, yellow, brown to black, over time it will become crushed and brittle. *Tinea unguium is* usually caused by species *Epidermophyton floccosum*, *Trichophyton rubrum, Trichophyton mentagrophytes.* This study aims to determine the percentage of sufferers *Tinea Unguium* in patients and the percentage of based on dermatophyte fungal species. The type of research used is literature study. The results of this literature study were obtained: the percentage of the results of the examination of patients with Tinea Unguium in patients was reported as 4.2% - 55.2%. The percentage of the results of the examination of the fungal species that cause *Tinea Unguium* in patients was reported as: *Trichophyton rubrum* 6% - 93.4%, *Trichophyton mentagrophytes* 5.2% - 40%, and *Epidermophyton floccosum* 0.1% - 4%.

Keywords : *Tinea Unguium*, patient

Korespondensi : Diyah Ayu Oktafiani, Program Studi Teknologi Laboratorium Medis Program Diploma Tiga Jurusan Analis Kesehatan Politeknik Kesehatan Tanjungkarang, Jalan Soekarno Hatta No. 1 Hajimena Bandar Lampung, mobile 082179151321, e-mail diyah4552@gmail.com

Pendahuluan

Jamur adalah mikroorganisme yang termasuk golongan eukariotik dan tidak termasuk golongan tumbuhan. Jamur berbentuk sel atau benang bercabang dan mempunyai dinding sel yang sebagian besar terdiri atas kitin dan glukan, dan sebagian kecil dari selulosa atau kitosan. Di alam bebas terdapat lebih dari 100.000 spesies jamur dan kurang dari 500 spesies diduga dapat menyebabkan penyakit pada manusia, salah satunya yaitu penyakit dermatofitosis (Sutanto, 2008).

Dermatofitosis tersebar diseluruh dunia dengan tiap negara memiliki prevalensi yang berbeda-beda. Demartofitosis yaitu penyakit yang disebabkan oleh jamur dermatofita yang menyerang jaringan yang mengandung keratin seperti stratum korneum kulit, rambut dan kuku pada manusia (Pravitasari, 2019). Dermatofitosis cukup banyak ditemukan baik pada laki-laki maupun perempuan. Sumber infeksi diduga berasal dari orang-orang disekitar penderita (antrofilik), tanah atau debu (geofilik), dan binatang peliharaan (zoofilik).

Penyakit dermatofitosis salah satunya adalah *Tinea Unguium* yaitu kelainan lempeng kuku. Faktor predisposisi terjadinya *Tinea Unguium* adalah trauma. Biasanya pasien *Tinea Unguium* mempunyai dermatofitosis ditempat lain yang sudah sembuh atau belum (Mansjoer, 2000). Kelainan *Tinea Unguium* biasanya disebabkan oleh spesies *Epidermophyton floccosum*, *Trichophyton rubrum*, *Trichophyton mentagrophytes* (Gandahusada, 1998). Kuku yang terinfeksi menjadi lebih tebal. Infeksi juga dapat menyebabkan kuku pecah-pecah, tidak rata, tidak mengkilat dan terjadi perubahan warna lempeng kuku menjadi putih, kuning, coklat hingga hitam. Kuku lama kelamaan akan menjadi hancur dan rapuh (Setianingsih, 2015).

Tinea Unguium di Australia, Inggris, dan USA dengan insiden sekitar 3% populasi, dapat meningkat sampai 5% pada orang berusia lanjut. Pada kelompok pekerja tambang, olahragawan, dan kelompok yang sering menggunakan perlengkapan bersama, insiden bisa meningkat sampai 20% (Soedarto, 2015). Pravelensi *Tinea Unguium* di Indonesia cukup tinggi yaitu 4,7% dari seluruh penyakit kulit dan 0,5% dari seluruh penyakit kulit yang disebabkan oleh jamur (Adillio, 2017).

Pasien adalah setiap orang yang melakukan konsultasi masalah kesehatannya untuk memperoleh pelayanan kesehatan yang diperlukan, baik secara langsung maupun tidak langsung di Rumah Sakit (Permenkes, 2018) dan memiliki gejala klinis *Tinea Unguium*. Faktor penyebab dapat terkena *Tinea Unguium* antara lain usia dari individu itu sendiri, jenis kelamin, faktor genetik, ras, gaya hidupnya, terapi obat, gangguan metabolik-endokrin seperti diabetes melitus, kontak dengan hewan, dan faktor lingkungan yang ditempati (Rassai, 2011). Hasil kuisioner penelitian oleh Toukabri (2017) memungkinkan faktor predisposisi yang potensial untuk *Tinea Unguium* antara lain, usia, jenis kelamin, diabetes, penyakit vaskular, pengobatan imunosupresif, psoriasis, infeksi jamur lain pada kulit, adanya onikomikosis kuku terkait, keluarga memiliki riwayat mikosis kaki, aktivitas fisik, pemakaian sepatu secara terus menerus, merokok, berjalan tanpa alas kaki, pedikur, dan penerapan henna (Toukabri, 2017).

Pasien yang memiliki sistem pertahanan tubuh yang baik, penyakit *Tinea Unguium* dapat sembuh selama mendapatkan pengobatan yang tepat dan pasien mampu menjaga kebersihan diri. Namun pada pasien yang memiliki gangguan fungsi sistem pertahanan tubuh, akan lebih mudah terinfeksi oleh jamur serta kesembuhan penyakit *Tinea Unguium* ini akan lebih sulit tercapai. Riwayat pasien dengan penyakit HIV, dan DM menjadi faktor resiko karena penurunan fungsi pertahanan tubuh sehingga membuat pasien ini rentan terhadap infeksi *Tinea Unguium.* Pada pasien yang terinfeksi HIV infeksi *Tinea Unguium* merupakan salah satu

manifestasi awal dengan prevelensi 15-40%. Kuku yang rusak secara mekanis menyediakan media yang ideal bagi jamur untuk menyerang dan berkembang biak dengan mudah, serta pasokan darah yang terganggu dan neuropati terkait diabetes mendukung pertumbuhan jamur *Tinea Unguium* (Surjushe, 2007).

Hasil penelitian (Pang, 2018) dari 229 spesimen kuku (pria : 71,6% ; wanita : 28,4%). Rata-rata pasien berusia 58 tahun (kisaran 18-93 tahun). Mayoritas pasien berusia di atas 50 tahun (70,7%) dan 60-79 tahun (43,7%). Secara etnis, 160 (69,9%) pasien adalah Cina, 36 (15,7%) India, 18 (7,9%) Malaysia, dan 15 (6,6%) etnis lainnya. Dermatofita yang diisolasi diantaranya adalah *Trichophyton rubrum* (40,6%), *Trichophyton mentagrophytes* (26,2%), *Epidermophyton floccosum* (5,5%),

Hasil penelitian (Sripriya CS, 2018) dari 200 sampel, jamur yang dideteksi 148 (74%) dengan larutan KOH dimana 158 sampel didapatkan kultur positif yang 130 sampel adalah dermatofita. Diantara isolasi dermatofita yang paling umum menginfeksi adalah *Trichophyton rubrum* (36%). *Tinea Unguium* adalah manifestasi klinis utama sebanyak 38% kasus, *Trichophyton rubrum* merupakan patogen tersering pada *Tinea Unguium* dan *Tinea Capitis*, sedangkan *Trichophyton mentagrophytes* adalah patogen yang paling umum pada *Tinea Pedis*.

Hasil penelitian (toukabri, 2017) dari 485 sampel, *Tinea Pedis dan Tinea Unguium* dikonfirmasi pada 88,2% kasus. Dermatofita diisolasi pada 70,5% dan patogen tersering adalah *Trichophyton rubrum* (98,1%), diikuti jamur lainnya (17,7%) biasanya *Candida parapsilosis.*

Berdasarkan latar belakang di atas, penulis ingin melakukan penelitian kepustakaan tentang Gambaran Penderita *Tinea Unguium* Pada Pasien.

Metode

Jenis penelitian yang digunakan adalah Studi Kepustakaan dengan cara melakukan pencarian artikel menggunakan bantuan situs pencari *google* atau *chrome* menggunakan website ilmiah seperti *google scholar, researchgate*, Hindawi, *online wiley library*, pubmed, dan sebagainya, baik secara nasional maupun internasional yang yang telah dipublikasikan pada tahun 2011 - 2021 berjumlah 10 artikel ilmiah yang memuat data yang dibutuhkan terkait tentang gambaran penderita *Tinea Unguium* pada pasien. Penelitian ini dilakukan mulai April - Juli 2021. Teknik analisa data yang digunakan pada peneilitian ini adalah metode analisis isi (*Content analysis*).

Hasil

Hasil penelitian kepustakaan ini didapatkan dengan cara melakukan pencarian artikel dari jurnal ilmiah yang diperoleh dari situs pencari *google* atau *chrome* menggunakan website ilmiah seperti *google scholar, researchgate*, Hindawi, *online wiley library*, pubmed, dan sebagainya, baik secara nasional maupun internasional yang telah dipublikasikan antara tahun 2011 – 2021, diperoleh 10 artikel ilmiah yang memuat data yang dibutuhkan terkait tentang gambaran penderita *Tinea Unguium* pada pasien.

Tabel 4.1 Hasil penelitian kepustakaan

No	Penulis, tahun, dan judul artikel	Tujuan	Metode penelitian dan sampel	Hasil
1.	Drakensjo, IT, & Chyeyssanthou, E (2011) "*Epidemiology of dermatophyte infection in*	Mengetahui profil dermatofitosis di Stockholm, Swedia.	Metode restropektif dengan 37.503 sampel.	Jumlah kasus *Tinea Unguium* yang didapat sebanyak 5.695 kasus dengan persentase 14,1% dari 37.503 sampel yang diperiksa. Spesies penyebab

	stockholm Sweden: a Restropective from 2005 – 2009".			*Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 5.365 (93,4%), *Trichophyton mentagrophytes* 297 (5,4%), *Epidermophyton floccosum* 3 (0,1%).
2.	Vena, Gino A (2012) "*Epidemiology Of Dermatophytoses: Retrospective Analysis From 2005 To 2010 And Comparison With Previous Data From 1975".*	Menganalisis kejadian dermatofitosis dan spesies penyebab yang sesuai di antara pasien yang mengunjungi Klinik dermatologi Rumah sakit Universitas Bari, Italia Selatan antara tahun 2005-2010 dan membandingkan hasil dengan data sebelumnya yang dikumpulkan di Klinik yang sama sejak 1975.	Metode restropektif dengan 6.133 sampel.	Pada periode 2005 – 2010 sampel klinis diperoleh dari 6.133 pasien. Jumlah kasus positif *Tinea Unguium* yang didapat sebanyak 292 kasus dengan persentase 39,2% dari total 745 kasus dermatofita. Spesies penyebab *Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 228 (78%), *Trichophyton mentagrophytes* 44 (15%), *Epidermophyton floccosum* 14 (4%).
3.	Kawai , Masaaki . *et. all* (2014) "*A Restropective Cohort Study of Tinea Pedis and Tinea Unguium in Patients in a Psychiatric Hospital".*	Mengetahui gambaran klinis dan spesies *Tinea Pedis* dan *Tinea Unguium* pada pasien rawat inap di Rumah Sakit Psikiater, Jepang.	Metode restropektif dengan 317 sampel.	Dari total 317 sampel yang diperiksa didapatkan total kasus *Tinea Unguium* adalah 75 kasus dengan persentase 23,7%. Spesies penyebab *Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 17 (70,8%), *Trichophyton mentagrophytes* 7 (29,2%).
4.	Teklebirhan, Gebreabiezgi (2015) "*Prevelence of Dermatophytc Infwction and the spectrum of Dermatophytes in patient Attending a Tertiary Hospital in Addis Ababa, Ethiopia".*	Mengetahui prevelensi dermatofitosis dan spektrum jamur kurap pada pasien yang datang ke Rumah Sakit Tersier.	Metode prospektif dengan 305 sampel.	Dari penelitian ini *Tinea Unguium* merupakan manifestasi klinis utama terhitung 156 (51,1%) kasus dari total 305 sampel. Spesies penyebab *Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 4 (8%), *Trichophyton mentagrophytes* 7 (14%).
5.	Sondakh ,Cyndi E. E. J., *et all (2016)* "Profil Dermatofitosis di Poliklinik Kulit Kelamin RSUP Prof. DR. R. D. Kandou Manado Periode Januari-	Mengetahui profil dermatofitosis di Poliklinik Kulit Kelamin RSUP Prof. DR. R. D. Kandou Manado Periode Januari-Desember 2013	Metode deskriptif restropektif dengan 153 sampel.	Jumlah kasus *Tinea Unguium* di RSUP Prof. Dr. R. D. Kandou Manado yang didapatkan yaitu dengan 8 kasus dengan persentase sebanyak 5,3% dari 153 kasus.

	Desember 2013”.			
6.	Toukabri, Nourchene., *et. All* (2017) “*Prevelence, Etiology, and Risk Factors of Tinea Pedis and Tinea Unguium in Tunisia”.*	Mengevaluasi epidemiologi mikosis kaki di antara pasien Tunisia, untuk menentukan agen etiologi jamur dan identifikasi kemungkinan faktor resiko.	Metode prospektif dengan 485 sampel.	Diperoleh hasil penelitian positif *Tinea Unguium* sebanyak 268 (55,2%) kasus yang di konfirmasi dari total 485 sampel. Spesies penyebab *Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 163 (60,8%).
7.	Sharma, Rekha., Luna A., Rukma Lall Sharma (2018) “*Recurrent dermatophytosis: a rising problem in sikkim, a Himalayan state of India”.*	Mengevaluasi pasien dengan dermatofitosis dalam kaitannya dengan manifestasi klinis, kekambuhan, variasi musim, dan identifikasi spesies penyebab.	Metode prospektif dengan 192 sampel.	Dari total 192 kasus didapatkan hasil positif *Tinea Unguium* adalah 30 kasus dengan persentase sebanyak 15,63%. Spesies penyebab *Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 4 (6,6%), *Trichophyton mentagrophytes* 24 (40%), *Epidermophyton floccosum* 2 (3,3%).
8.	Balamuruganvelu, S., *et. All* (2019) “*Age and Genderwise Seasonal Distribution of Dermatophytosis in a Tertiary Care Hospital, Puducherry, India”.*	Menyelidiki usia dan jenis kelamin pada prevelensi tersering dermatofitosis yang mengunjungi Rumah Sakit Tersier, Puducherry	Metode *cross sectional* dengan 365 sampel.	Dari total 365 sampel didapatkan hasil positif *Tinea Unguium* sebanyak 82 (23%) kasus dimana 24 kasus pada pria dengan persentase 29,3% dan 58 kasus pada wanita dengan persentase 70,7%. Spesies penyebab *Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 5 (6,6%), *Trichophyton mentagrophytes* 11 (13,4%).
9.	Taufiq., Dian Erisyawanty Batubara (2020) “Profil Dermatofitosis di Rumah Sakit Umum Daerah Deli Serdang Tahun 2015 – 2017”.	Mengetahui profil dermatofitosis di Rumah Sakit Umum daerah Deli Serdang	Metode deskriptif restropektif dengan 345 sampel.	Jumlah kasus *Tinea Unguium* di Rumah Sakit Umum Daerah Deli Serdang Tahun 2015 - 2017 adalah 16 (4,6%) kasus dari total 345 sampel.
10.	Pradhan, MB. & Paudel, V (2021) “*Clinico-mycological study of dermatophytosis and their antifungal susceptibility, a*	Mengidentifikasi pola klinis-mikologi infeksi dermatofit pada pasien yang menghadiri derpatemen rawat jalan dermatologi	Metode prospektif dengan 349 sampel.	Dari total 349 sampel didapatkan hasil positif *Tinea Unguium* sebanyak 15 (4,2%) kasus dengan spesies penyebab *Tinea Unguium* yang ditemukan diantaranya adalah *Trichophyton rubrum* 4 (26,6%), *Trichophyton*

hospital based study"	dari rumah sakit tersier di Birgunj dan daerah sekitarnya	*mentagrophytes* 2 (13,3%).

Pembahasan

Hasil kajian pustaka dari 10 artikel yang diperoleh menunjukkan adanya variasi hasil positif *Tinea Unguium* yaitu pada rentang 4,2% - 55,2%. Kasus tertinggi ditemukan pada penelitian toukabri (2017) yaitu dari 485 sampel yang diperiksa didapatkan hasil positif *Tinea Unguium* 268 sampel dengan persentase 55,2%. Kasus tertinggi kedua ditemukan pada penelitian Teklebirhan (2015) yaitu dari 305 sampel yang di periksa didapatkan hasil positif *Tinea Unguium* 156 sampel dengan persentase 51,1%. Kasus terendah ditemukan pada penelitian Pradhan (2021) yaitu hasil positif *Tinea Unguium* adalah 15 sampel dengan persentase 4,2% dari total 349 sampel yang diperiksa.

Faktor penyebab *Tinea Unguium* diantaranya lokasi geografis, iklim (suhu, kelembaban, dll), kepadatan penduduk, perawatan kesehatan, usia individu, kebersihan lingkungan serta kondisi sanitasi yang buruk, dan kondisi sosial ekonomi (Teklebirhan, 2015). Faktor lain penyebab dapat terkena *Tinea Unguium* antara lain usia dari individu itu sendiri, jenis kelamin, faktor genetik, ras, gaya hidupnya, terapi obat, gangguan metabolik-endokrin seperti diabetes melitus, kontak dengan hewan, dan faktor lingkungan yang ditempati (Rassai, 2011).

Hasil kuisioner penelitian oleh Toukabri (2017) memungkinkan faktor predisposisi yang potensial untuk *Tinea Unguium* pada pasien antara lain, usia, jenis kelamin, diabetes, penyakit vaskular, pengobatan imunosupresif, psoriasis, infeksi jamur lain pada kulit, adanya onikomikosis kuku terkait, keluarga memiliki riwayat mikosis kaki, aktivitas fisik, pemakaian sepatu secara terus menerus, merokok, berjalan tanpa alas kaki, pedikur, dan penerapan henna (Toukabri, 2017).

Mempertimbangkan faktor resiko terjadinya *Tinea Unguium*, penelitian Toukabri (2017) menemukan hubungan yang signifikan dengan pasien yang melakukan aktivitas fisik (14,7%), memakai sepatu terus menerus (26,3%), sering mengalami trauma kuku (26,5%) dan keluarga memiliki riwayat mikosis kaki (28,6%). Pada penelitian kawaii (2014), menunjukkan bahwa *Tinea Unguium* menjadi lebih parah pada pasien dengan penyakit skizofrenia dan depresi. Pasien dengan gangguan jiwa sering tidak bisa merawat kakinya dengan benar karena gejala kejiwaan mereka menyebabkan mereka menjadi apatis dan tidak tertarik, selain itu pasien ini sering berjalan terus menerus sehingga meningkatkan kemungkinan tertular *Tinea Unguium*, serta diabetes militus dan HIV harus dianggap sebagai faktor resiko *Tinea Unguium* (Kawai, 2014). Walaupun bisa dikaitkan dengan penyakit kronis seperti diabetes dan HIV, dapat dijelaskan bahwa orang dengan infeksi kronis sekarang lebih memperhatikan kesehatannya (Toukabri, 2017).

Jumlah maksimum kasus *Tinea Unguium* terlihat antara musim semi dan musim panas dibandingkan dengan musim lainnya, yang mungkin disebabkan oleh suhu yang menguntungkan (35˚C) dan kelembaban (90%) untuk pertumbuhan jamur selama bulan – bulan tersebut (Sharma, 2018). Penelitian Toukabri (2017) juga menyebutkan bahwa frekuensi tinggi pada musim semi dan musim panas, bisa dikaitkan dengan pemakaian sepatu oklusif pada iklim hangat yang menyebabkan panas pada kaki sehingga dianggap sebagai faktor resiko berkembangnya jamur.

Tinea Unguium meningkat seiring bertambahnya usia, pravelensi maksimun terlihat pada orang dewasa berusia antara 31 – 60 tahun, peningkatan ini dapat dijelaskan oleh

banyak kondisi seperti pekerjaan atau aktivitas penuh waktu, sering terkena trauma kuku, pertumbuhan kuku yang berkurang, dan perawatan kaki yang tidak memadai (Toukabri, 2017). Pertumbuhan kuku berkurang, dan ketidakmampuan untuk melakukan perawatan kuku dengan baik dapat memungkinkan terserang jamur dermatofita (Teklebirhan, 2015). Distribusi *Tinea Unguium* berdasarkan jenis kelamin di dominasi perempuan. Perempuan lebih terlibat dalam kegiatan rumah tangga dan frekuensi terkena paparan akan kondisi yang lembab mungkin menjadi alasan peningkatan *Tinea Unguium* (Balammuruganvelu, 2019).

Sondakh (2016) menyebutkan pada distribusi dermatofitosis berdasarkan pekerjaan didapatkan bahwa ibu rumah tangga merupakan kasus dermatofitois terbanyak dengan 35 (22,9%) kasus. Hal ini disebabkan karena pekerjaan domestik ibu rumah tangga banyak melibatkan panas dan lembab, yang merupakan suasana yang baik untuk jamur berkembang biak. Selain itu pekerjaan ibu rumah tangga merupakan kegiatan rutin yang berulang setiap hari, sehingga jika ada kebiasaan yang tidak higienis yang terus diulang akan memperbesar resiko terkena dermatofitosis.

Setianingsih (2018) menyebutkan bahwa 80 – 90 % kasus *Tinea Unguium* disebabkan oleh jamur dermatofita, khususnya *Trichophyton rubrum*, *Trichophyton mentagrophytes* dan *Epidermophyton floccosum.* Berdasarkan 10 artikel yang telah ditelaah, didapatkan persentase spesies jamur dermatofita penyebab *Tinea Unguium* pada pasien antara lain jamur *Trichophyton rubrum* 6% – 93,4%, jamur *Trichophyton mentagrophytes* 5,4% - 40%, dan jamur *Epidermophyton floccosum* 0,1% - 4% (lampiran 1).

Hal ini ditunjukkan pada hasil artikel yang diteliti pada penelitian studi pustaka ini secara terperinci sebagai berikut : *Trichophyton rubrum* 93,4%, jamur *Trichophyton mentagrophytes* 5,4%, dan jamur *Epidermophyton floccosum* 0,1% oleh Drakensjo (2011), jamur *Trichophyton rubrum* 78%, jamur *Trichophyton mentagrophytes* 15%, dan jamur *Epidermophyton floccosum* 4% oleh Vena (2012), jamur *Trichophyton rubrum* 70,8%, dan jamur *Trichophyton mentagrophytes* 29,2% oleh Kawaii (2014), jamur *Trichophyton rubrum* 8%, dan jamur *Trichophyton mentagrophytes* 14% oleh Teklebirhan (2015), jamur *Trichophyton rubrum* 60,8% oleh Toukabri (2017), jamur *Trichophyton rubrum* 6,6%, jamur *Trichophyton mentagrophytes* 40%, jamur *Epidermophyton floccosum* 3,3% oleh Sharma (2018), jamur *Trichophyton rubrum* 6%, jamur *Trichophyton mentagrophytes* 13,4% oleh Balammuruganvelu (2019), dan jamur *Trichophyton rubrum* 26,6%, jamur *Trichophyton mentagrophytes* 13,3% oleh Pradhan (2021).

Secara keseluruhan, *Trichophyton rubrum* adalah spesies jamur dermatofita tersering yang menyebabkan *Tinea Unguium* di seluruh dunia. *Trichophyton rubrum* adalah jamur antrofilik yang menjadi distribusi dermatofita paling luas yang sering menyebabkan infeksi kronis pada kulit dan kuku. *Trichophyton mentagrophytes* adalah spesies jamur dermatofita penyebab *Tinea Unguium* yang paling umum kedua setelah *Trichophyton rubrum* (Toukabri, 2017). *Trichophyton rubrum* sebagai spesies jamur dermatofita penyebab utama dan paling banyak menyebabkan *Tinea Unguium* (Vena, 2012). Pada penelitian Kawaii (2014), spesies jamur dermatofita penyebab *Tinea Unguium* yang relatif tinggi adalah *Trichophyton rubrum*.

Cara penularan jamur dapat secara langsung maupun tidak langsung. Penularan langsung dapat melalui fomit, epitel, dan rambut-rambut yang mengandung jamur baik dari manusia, binatang, dan dari tanah. Penularan tidak langsung dapat melalui tanaman, kayu yang dihinggapi jamur, barang-barang atau pakaian, debu, atau air. Sehingga pencegahan terjadinya *Tinea Unguium*

dapat dilakukan dengan cara menggunakan alas kaki dengan ukuran yang pas dan tidak terlalu sempit, memakai kaos kaki yang terbuat dari bahan katun yang dapat menyerap keringat dan meningkatkan higiene individu dengan memperhatikan kebersihan kuku seperti memotong kuku secara teratur (Siregar, 2004).

Simpulan

Berdasarkan hasil penelitian studi pustaka pada 10 artikel yang telah ditelaah dapat disimpulkan sebagai berikut :

1. Pasien yang positif terinfeksi *Tinea Unguium* dilaporkan sebanyak : 5.695 dari 37.503 oleh Drakensjo (2011), 292 dari 6.133 oleh Vena (2012), 75 dari 317 oleh Kawai (2014), 156 dari 305 oleh Teklebirhan (2015), 8 dari 153 oleh Sondakh, *et all* (2016), 268 dari 485 oleh Toukabri (2017), 30 dari 192 oleh Sharma (2018), 82 dari 365 oleh Balamuruganvelu (2019), 16 dari 345 oleh taufiq (2020), 15 dari 349 oleh Pradhan (2021).
2. Persentase hasil pemeriksaan terhadap penderita *Tinea Unguium* pada pasien dilaporkan sebanyak 4,2% - 55,2%.
3. Persentase hasil pemeriksaan terhadap spesies jamur penyebab T*inea Unguium* pada pasien dilaporkan sebanyak : *Trichophyton rubrum* 6% – 93,4%, jamur *Trichophyton mentagrophytes* 5,4% - 40%, dan jamur *Epidermophyton floccosum* 0,1% - 4%.

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