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■ Invited Article ■

Mycotic Diseases in Indonesia, with Emphasis on Skin Fungal Infection

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=Abstract=

Indonesia is a tropical country and is the largest archipelago in the world. The country consists of more than 17,000 islands, although only 6,000 are inhabited by a population of more than 201 million people.

In tropical countries, superficial mycosis are prevalent all the time, pytiriasis versicolor, several clinical forms of tineas and cutaneous candidosis comprise the most common spectrum of the disease. In our clinic this group diseases ranks the second or third place after dermatitis and acne vulgaris. Besides these common superficial fungal diseases, tinea imbricata is endemic in eastern parts of islands in Indonesia.

Sporotrichosis, chromomycosis, mycetoma and subcutaneous zygomycosis are occasionally seen in our clinic. The incidence of mycosis profunda is 0~2 per year in our department. Besides dermatomycosis, systemic mycosis s.a. lung aspergillosis, candidosis of the G.I. tract were also observed. Other systemic mycosis reported as endemic are histoplasmosis and cryptococcosis. **[Kor J Med Mycol 4(1): 1-5]**

Key Words: Indonesia, Skin fungal infection

INTRODUCTION

Indonesia is a tropical country extending from 95°~135° east longitude and 6° north~11° south latitude[1]. This country is the largest archipelago of the world, consisting of more than 17,000 islands, of which only 6,000 are inhabited by a population of more than 201 million. The average life expectancy is 63 years. Number of people per doctor is 6786. Medical professionals and scientists interested in medical mycology are mostly dermatologists except a few microbiologist, parasitologists, internal medicine doctors and vetenerians. The Indonesian medical mycology society has about a little more than 200 registered members. On the other hand there are about 500 dermatologists including residents. Most of the medical professionals, general or specialistic are concentrated in the big cities.

Since Indonesia has a tropical climate and is a developing country, mycosis especially dermatomycosis occurs very frequently. Besides the two previously mentioned factors in contributing to the flourishing of skin mycosis in tropical country such as Indonesia, there are general factors, which help to bring to exponental increase, in this era of advanced medical technology. These factors are longer life-

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span, the use of antineoplastics, overusage of broad spectrum antibiotics, immunosuppresive drug usage, increase in parenteral therapy, surgery, artificial devices usage, organ transplants and AIDS.

MYCOSES IN INDONESIA

1. Systemic Mycoses

Reports on systemic mycoses are rare since clinical signs and symptoms of this group of diseases are not pathognomonic and can mimic other infectious diseases, which are very common in this area. Despite of this obstacle there were reported cases proven by mycologic examination from the mycologic section Department of Parasitology and Department of Pathologic anatomy, Faculty of medicine, University of Indonesia, Jakarta. During the last 15 years, 42 cases of histoplasmosis, 7 cases of cryptococcosis and 32 cases of pulmonary aspergillosis were found[1].

In North Sumatra Medan, Tanjung et al. conducted a cross sectional survey on 489 students using histoplasmin skin test and concluded that 12.67~18.15% were positive. This result indicate that histoplamosis is not uncommon in that area[2].

Busroh et al. reported that during 20 (1970~1990) and 4 (1992~1995) years operated lung cases were 2 (4.5%) and 23 (8.8%) respectively from the Persahabatan Hospital Jakarta, Indonesia. They further concluded that most cases were secondary infection to tuberculosis[3].

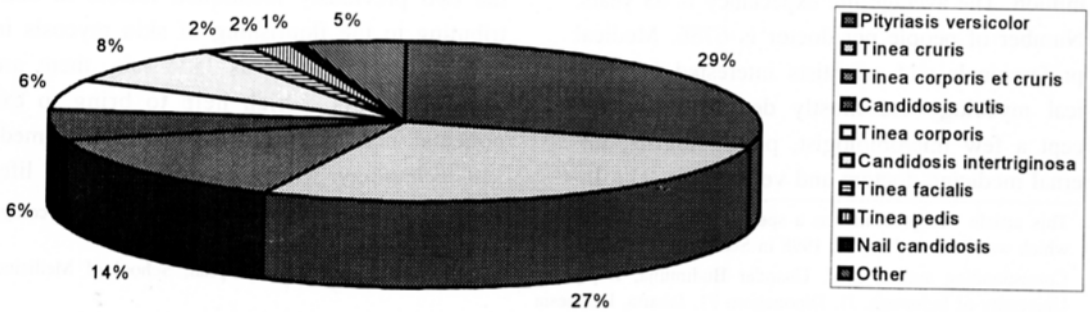
2. Subcutaneous mycoses

Subcutaneous mycoses were not common. Cases diagnosed in dermatologic clinics were at most 1~2 /per year.

These cases were usually chromomycosis, sporotrichosis, mycetoma and subcutaneous zygomycosis. Sporotrichosis and subcutaneous zygomycosis were formerly treated with saturated potassium iodide solution. Dosage given were just below the toxic dose and kept until 3~4 months. Nowadays we are using itraconazol 200 mg daily for 1~1.5 months with excellent results. This regimen using the newer triazole derivative were more convenient to the patients, eventhough more expensive. Treatment for chromomycosis and mycetoma especially for advanced cases is very difficult.

Nasution et al. had excellent results with 2x 100 mg daily itraconazole for 4 months combined with electrodessication[4]. On the other hand we got satisfactory improvement with 200 mg/daily for 2.5 months. Unfortunately the patient developed fatty liver, so that the triazole treatment had to be stopped. The etiologic agent in this case was *Fonsacea pedrosoi*. Actualy before the patient developed fatty liver, we were planning to give him a combined treatment with 5 fluocytosine.

As it was stated, mycetoma cases were not common. In actinomycetoma antibiotics treatment, if not late and advanced cases, gave satisfactory results. Antibiotics s.a. streptomycin, amoxicillin were given for months and other

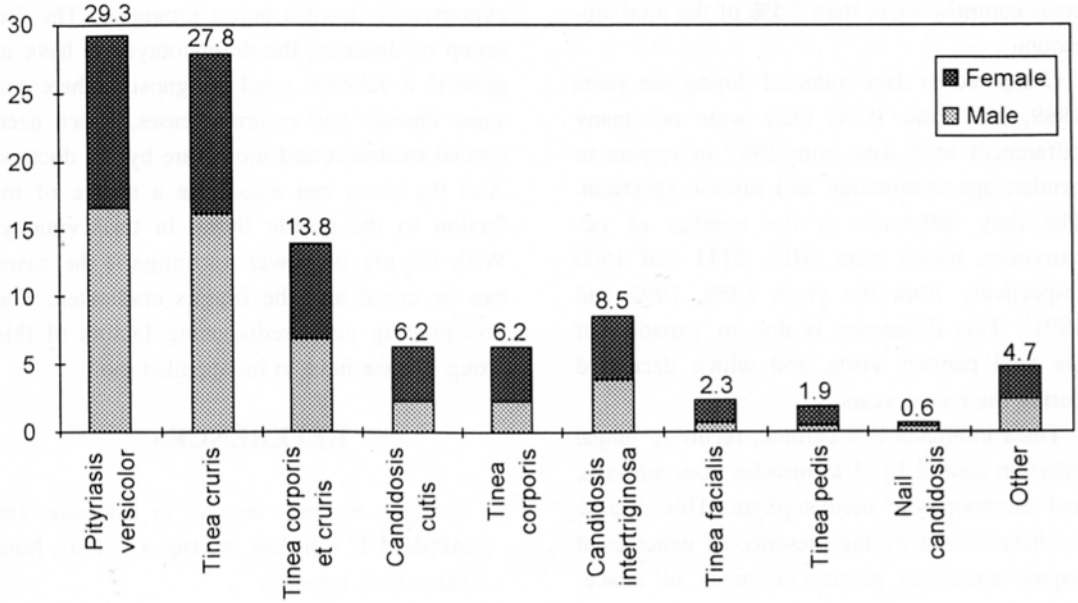


regimens include co-trimoxazole and amikacin. Recently we have treated a case with clarithromycin successfully.

On the other hand response of eumycetoma

Table 1. Occurrence of dermatomycosis in 1997 from mycologic subdepartment, Department of Dermato-Venereology, School of Medicine, University of Indonesia

No.	Diagnosis \ age	0-1		1-4		5-14		15-24		25-44		45-64		>65		Subtotal (%)		Total (%)
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
1	Pityriasis versicolor	7		2	3	29	14	79	54	81	62	21	35	3	2	222 (16.6)	170 (12.7)	392 (29.3)
2	Tinea cruris					7	2	70	45	103	82	31	27	3	3	214 (16.0)	159 (11.9)	373 (27.8)
3	Tinea corporis et cruris					6	3	42	25	29	42	14	20	2	2	93(6.9)	92(6.9)	185(13.8)
4	Candidosis cutis	4	5		4		1	1	11	18	12	6	15	2	4	31(2.3)	52(3.9)	83(6.2)
5	Tinea corporis		1	2		3	2	11	17	14	20	4	8	1		35(2.6)	48(3.6)	83(6.2)
6	Candidosis intertriginosa	3	9	1				6	4	20	25	19	22	2	3	51(3.8)	63(4.7)	114(8.5)
7	Tinea facialis	1			1	2	3	2	4	2	10	1	5			8(0.6)	23(1.7)	31(2.3)
8	Tinea pedis								1	3	6	2	12		1	5(0.4)	20(1.5)	25(1.9)
9	Nail candidosis			1		5		1	1				1			7(0.5)	2(0.1)	9(0.6)
10	Others			1	5	2		7	7	13	15	6	2	3	1	32(2.4)	30(2.3)	62(4.7)
	Subtotal	15	15	7	11	54	25	214	166	282	270	103	146	16	16	691	649	1340
	%	1.1	1.1	0.5	0.8	4.0	1.9	16.0	12.4	21.0	20.1	7.7	10.9	1.2	1.2	51.6	48.4	100.0



to antifungal treatment is dissappointing. Surgical excision is the method of choice if the lesions are small enough for total removal to be possible. Amputation is often required in advanced cases with bone involvement. Drug treatment to be considered is itraconazole.

3. Superfical mycoses

Occurrence of dermatomycosis from the mycologic subdepartment, Department Dermato-Venereology, School of Medicine, University of Indonesia during 1997 can be seen in Table 1. Total number of new patients visiting the out-patient clinic during the 1997 was 1,340, consisting of 691 (51.6%) male and 649 (48.4%) female[6].

Patients aged 25~44 years suffering from this group of skin mycoses comprised the largest (44.1%), followed by the age group 15~24 years (38.4%). The following age group was 45~64 years (18.6%). The children and geriatric patients (>65 years) followed the occurrence rate of 9.5% for 0~14 years and 2.4% for >65 years.

The five most common superficial mycoses were pityriasis versicolor, tinea cruris, tinea cruris et corporis, candidosis cutis and tinea corporis. Other clinical forms of dermatomycosis comprised less than 2.5% of the total ammount.

Compared to data collected during the years 1989, 1990 and 1991, there were not many differences with data from 1997 in respect to gender, age distribution and disease spectrum. The only difference is the number of occurrences, which were 2013, 2141 and 1500 respectively from the years 1989, 1990 and 1991[5]. This difference is due to variation of the total patients visits, and which decreased during the recent years.

Tinea imbricata is a chronic, recurrent fungal infection caused by *Trichophyton concentricum,* and antropophylic dermatophyte. This disease is characterized by the presence of generalized papulo-squamous plaques arranges in concentric rings and it occurs particularly among the islands of the South Pacific, in South-East Asia and in South and Central America. In Indonesia it is present in several parts of the country, including Sulawesi, Irian Jaya, Kalimantan, Sumatra and some of the islands in the centre of Eastern Indonesia[6]. Patients suffering from this disease are usually indigeneous people living in remote and secluded areas. Budimulja et al. diagnosed 150 cases from 6,115 population in 19 villages in some part of Central Kalimantan (2.45%)[7].

CONCLUSION

Infection due to fungi is quite common in Indonesia. Systemic mycosis is under reported since clinical pictures can mimick other infections diseases. Subcutaneous mycosis is not so frequently diagnosed. The most common mycotic disease is the superficial mycosis. The first group of systemic infection if not diagnose in the early stage can have fatal consequences. The second group of subcutaneous mycosis, even not life threatening, can have debilating consequences and affect the patient's quality of life, certainly if they came in advance stage. Sporotrichosis and subcutaneous zygomycosis have a better prognosis. The 3rd group of diseases, the dermatomycosis have in general a relative good prognosis. There are some chronic and recurrent cases, which need special treatment and more care by the doctors. And the cases can also pose a source of infection to the people living in their vinicity. With the era of newer antifungals, the cases can be cured and the fungus eradicated. The precipitating and predisposing factors of this group disease have to be attended too.

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