

Infeksi jamur superfisial (mikosis superfisialis)



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Pendahuluan

Report

Cutaneous fungal infections in the United States: Analysis of the National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS), 1995–2004

Anil A. Panackal, MD, FACP, Elkan F. Halpern, PhD, and Alice J. Watson, MD, MPH

- Prevalence: ~ 29.4 million cases
- Annual economic burden
 - ☞ USD\$1,953,000,000 in expenses
 - ☞ USD\$450,000,000 in indirect costs
- Ranked 4th among 22 skin disease groups evaluated in terms of direct costs
 - ☞ USD\$1.7 billion with 74% of costs attributable to prescription drugs
- an estimated average of 4,124,038 ± 202,977 annual visits during the study period
 - ☞ (N.B. 2010: 308 million)

Klasifikasi mikosis superfisialis berdasarkan penyebab

- Dermatofitosis
- kandidiasis superfisialis
- Infeksi Malassezia/panu

Dermatofitosis

- Infeksi jaringan keratin (kulit, kuku & rambut) oleh jamur filamen gol. dermatofita
- genus dermatofita
 - Tricophyton,
 - Microsporum
 - Epidermophyton,
- ± 10 spesies menyebabkan dermatofitosis pada manusia

Asian incidence of the most common mycoses identified

	Prohic <i>et al.</i> ³⁸	Çelik E <i>et al.</i> ⁴¹	Lari <i>et al.</i> ⁴²	Tao-Xiang <i>et al.</i> ⁴⁶	Kim <i>et al.</i> ⁴⁹	Singal <i>et al.</i> ⁴³	Min ⁴⁸
<i>Microsporium canis</i>	1.5		15.1				65
<i>M. audounii</i>						34	
<i>M. gypseum</i>			7.5			3	
<i>Trichophyton mentagrophytes</i>	38	42.9	11.3	29.4		3	
<i>T. rubrum</i>	56	57.1	13.2	43.9			
<i>T. verrucosum</i>	1.5		5.7			3	
<i>T. violaceum</i>	1.5		28.3			38	18
<i>T. tonsurans</i>						9	9
<i>T. schoenleinii</i>						10	
<i>T. asahii</i>					62.1		
<i>T. mucoides</i>					20.3		
<i>T. inkin</i>					14.9		
<i>Epidermophyton floccosum</i>	1.5		15.1				
<i>Candida spp.</i>				14.0			

All values are percentages

In Asia, *T. rubrum* and *T. mentagrophytes* are the most commonly isolated pathogens, causing tinea pedis and unguium, as is the case in Europe.

Havlickova *et al*, Mycoses

Dermatophytosis di Indonesia

- Geofilik: *M. gypseum*
- Zoofilik: *M. canis*
- Antropofilik:
 - *T. rubrum*
 - *T. concentricum*
 - *E. floccosum*

Patologi & organ terinfeksi

	Kuku	kulit	rambut
<i>Trichophyton</i>	+	+	+
<i>Microsporum</i>	+	+	+
<i>Epidermophyton</i>	+	+	-

CLINICAL PRESENTATIONS OF DERMATOPHYTOSES

Infection	Clinical Site
Tinea capitis	Scalp
Tinea favosa	Scalp
Kerion	Scalp, hair
Majocchi granuloma	Hair
Tinea faciei	Face
Tinea barbae	Beard
Tinea corporis	Glabrous skin
Tinea cruris	Groin
Tinea manuum (manus)	Hand
Tinea pedis	Feet
Tinea unguium	Nails

- Gejala klinik tergantung pada:
 - Lokalisasi infeksi
 - Respons imun pejamu
 - Spesies jamur
- Lesi: karakteristik (ring worm) tetapi dalam kondisi imuno supresi menjadi tidak khas → perlu pemeriksaan laboratorium

Dermatofita & dermatofitosis

T. rubrum: biakan. kapang, pigmen merah, mikrokonidia lonjong, tetesan air mata/anggur, makrokonidia seperti pinsil/cerutu



- antropofilik,
- kelainan kronik mis.
 - tinea kruris, onikomiksosis



Figure 1. Patterns of Fungal Nail Infection.

The three main patterns of fungal nail infection are infection gaining access from the distal or lateral margin (distolateral onychomycosis) (Panel A), infection on the surface of the nail plate (superficial white onychomycosis) (Panel B), and fungal invasion appearing to occur from the proximal underside of the nail (proximal white onychomycosis) (Panel C).

Dermatofita & dermatofitosis

M. canis



Pada manusia, akut (zoofilik),
kerion

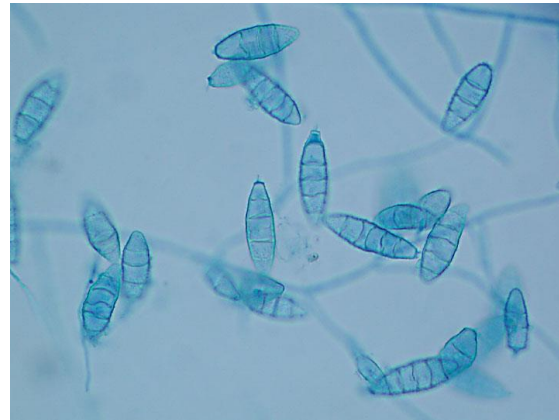
Makrokonidia: bentuk kumparan,
5-25 sel, ujung lancip, dinding tebal

Pada hewan



Dermatofita & dermatofitosis

M. gypseum



Single inflammatory lesion

Geofilik, kosmopolit, menginfeksi hewan & manusia terutama anak dan petani (cuaca hangat & lembab) Lesi tunggal pada kulit atau skalp (ektotriks), Wood's light negatif.

Mikroskopis: makrokonidia, bentuk kumparan, 4-6 sel

Dermatofita & dermatofitosis

E. floccosum



Dermatofitosis:
tipe mokasin, penyebab *E. floccosum*

Gejala klinik

Kulit

- Lingkaran konsentris, tepi aktif, tengah lebih tenang



- Mendapat steroid → incognito (gejala tidak khas)



Kuku & rambut

- Slide berikut

Bentuk klinis

Tinea kapitis



Tinea korporis



Bentuk klinis

tinea cruris

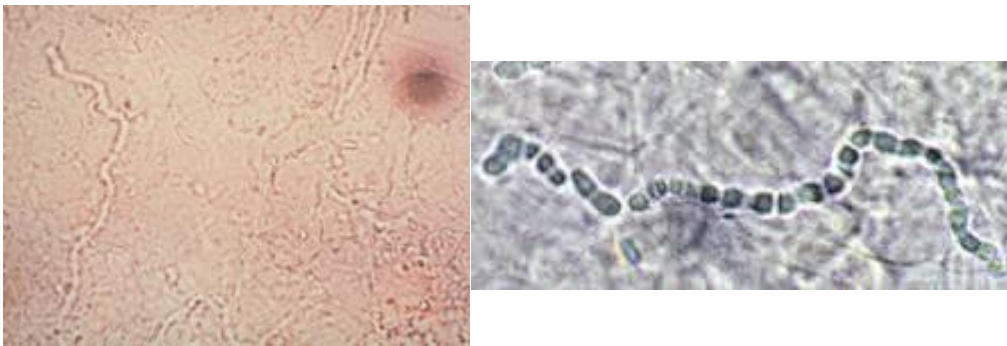


Tinea unguium/onikomikosis



Diagnosis

- Bahan klinik: kerokan kulit, kerokan kuku, rambut
- Pemeriksaan:
 - Pemeriksaan langsung, sediaan basah KOH
 - Kultur: menumbuhkan jamur pada medium sabouroud

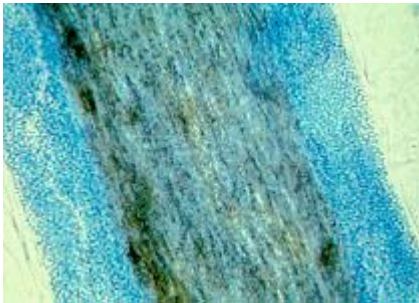


Pemeriksaan langsung: hifa, artrospora

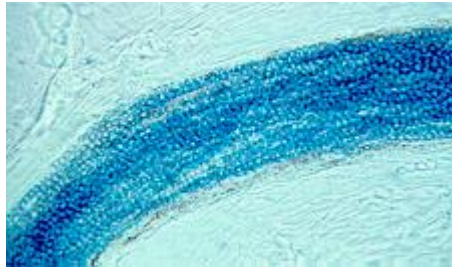


Kultur

Infeksi rambut: sediaan KOH



Infeksi ektotriks e.c. *M. canis* & *M. gypseum*
(Indonesia)



Infeksi endotriks, e.c. *T. tonsurans*

- treatment:
 - Topical: imidazol, mikonazol
 - Systemic
 - Combination in wide spread disseminated lesion
- The more used antifungals are griseofulvin (the "gold standard" in tinea capitis), the azoles (itraconazole and fluconazole) and allylamines.
- Topical therapy is used as the sole therapy in the limited forms of the infection and whenever the hair or nails are not involved. They are important as adjuvant of systemic therapy.
- Ciclopirox, an Amorolphine nail lacquer formulation, are useful in treatment of onychomycosis. Also several different measures are important in the prevention of recidives and reinfection.

Table 2. Oral treatment options for cutaneous fungal infections (cited from Mycology online).

Infection	Recommended	Alternative
Tinea unguium [Onychomycosis]	Terbinafine 250 mg/day 6 weeks for finger nails, 12 weeks for toe nails.	Itraconazole 200 mg/day/3-5 months or 400 mg/day for one week per month for 3-4 consecutive months. Fluconazole 150-300 mg/ wk until cure [6-12 months]. Griseofulvin 500-1000 mg/day until cure [12-18 months].
Tinea capitis	Griseofulvin 500mg/day [not less than 10 mg/kg/day] until cure [6-8 weeks].	Terbinafine 250 mg/day/4 wks. Itraconazole 100 mg/day/4wks. Fluconazole 100 mg/day/4 wks
Tinea corporis	Griseofulvin 500 mg/day until cure [4-6 weeks], often combined with a topical imidazole agent.	Terbinafine 250 mg/day for 2-4 weeks. Itraconazole 100 mg/day for 15 days or 200 mg/day for 1week. Fluconazole 150-300 mg/week for 4 weeks.
Tinea cruris	Griseofulvin 500 mg/day until cure [4-6 weeks].	Terbinafine 250 mg/day for 2-4 weeks. Itraconazole 100 mg/day for 15 days or 200 mg/day for 1week. Fluconazole 150-300 mg/week for 4 weeks.
Tinea pedis	Griseofulvin 500mg/day until cure [4-6 weeks].	Terbinafine 250 mg/day for 2-4 weeks. Itraconazole 100 mg/day for 15 days or 200 mg/day for 1week. Fluconazole 150-300 mg/week for 4 weeks.
Chronic and/or widespread non-responsive tinea.	Terbinafine 250 mg/day for 4-6 weeks.	Itraconazole 200 mg/day for 4-6 weeks. Griseofulvin 500-1000 mg/day until cure [3-6 mon



Epidemiologi dermatofitosis

- Dermatofitosis: *Microsporum*, *T. rubrum*, *Epidermophyton*
- ▲ *T. concentricum*: Kalimantan Tengah (Budimulya et al), Papua, Raja Ampat (Bramono) & Mauk, Tangerang (Widyanto et al)

KANDIDOSIS SUPERFISIALIS

Candidiasis (or Candidosis)

- refers to a group of infections caused by yeasts of the genus *Candida*.
- *Candida albicans* accounts for 70 to 80% of all *Candida* infections.
- The infections of skin, nails and oral mucous membranes will be referred in this presentation

- *C. albicans* is often found as a saprophyte and colonizes the mucous membranes and, rarely, the skin.
- There are well known identified predisposing factors to the infection.
- Clinical manifestations can be divided into several syndromes, namely: oral, cutaneous candidiasis and onychomycosis.

- Laboratory findings are needed to diagnose infection definitely.

Spektrum klinik kandidosis

Oral trush/sariawan



Diaper rash



Spektrum klinik kandidosis

Kandidiasis vaginae



Kandidiasis kuku

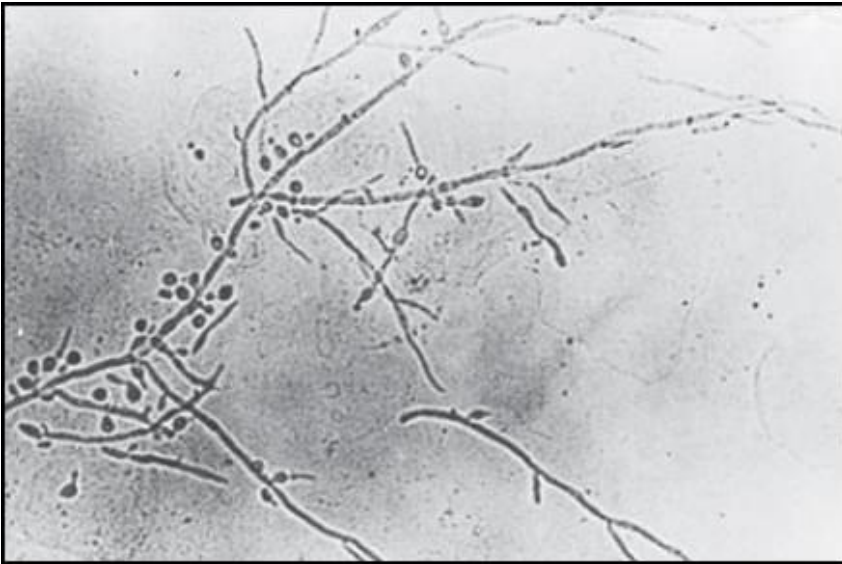


Diagnosis

- Bahan klinik:
 - Kerokan kuku/kulit
 - Usap mulut/vagina
- Pemeriksaan
 - Langsung: KOH/salin
- Kultur: medium sabouraud dekstrosa

Hasil pemeriksaan laboratorium

Sediaan KOH – kulit



Kultur bahan klinik



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Pengobatan

- In the therapy of these infections are used: nystatin suspension, and the azoles either topical or oral (systemic)
- Obat anti jamur
 - Topikal:
 - gentian violet
 - Nystatin
 - Sistemik (oral):
 - Flukonazol
 - Itrakonazol

PYTIRIASIS VERSICOLOR

Malassezia infections

- Tinea versicolor/malazesiosis infeksi kulit yang disebabkan jamur lipofilik yang merupakan saprofit di kulit

Malassezia di Indonesia

- *M. furfur*
- *M. sympodialis*
- *M. globosa*
- *M. sloofiae*
- *M. restrita*
- *M. obtusa*

Gambaran klinik

Hipopigmentasi



Hiperpigmentasi



Diagnosis

- Bahan klinik”kerokan kulit
- Pemeriksaan:
- `Langsung – KOH



Sediaan KOH, hifa pendek, kumpulan spora, spageti and meat ball

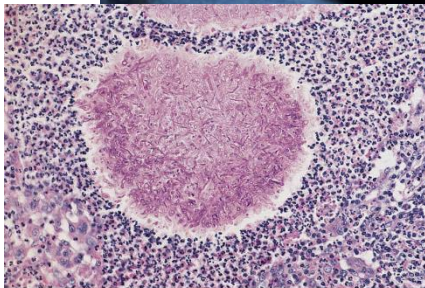
Pengobatan

- Topikal:
 - selenium sulfide,
 - sodium sulfacetamide,
 - ciclopiroxolamine,
 - azole
 - allylamine antifungals
- Sistemik-oral:
 - ketokonazol
 - flukonazole, itrakonazol (jarang)

**DEEP SEATED MYCOSES/MIKOSIS
PROFUNDA**

Mikosis profunda (deep seated mycoses)

Eumycetoma

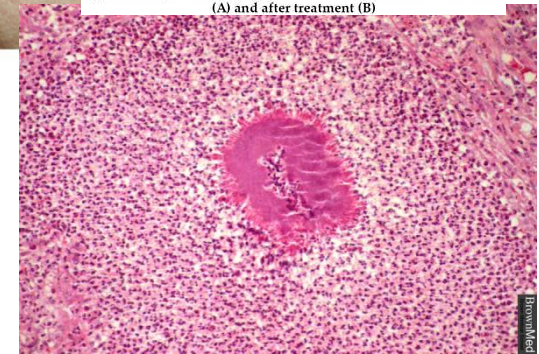


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(actinomycoses)



Fig. 1 : Multiple discharging sinuses over anterior chest wall before (A) and after treatment (B)



Dr. M. K. S. Reddy

Clinical presentation

Eumycetoma

- painless, rarely painful
- Gradual enlargement of the affected site and difficulties with ambulation → seek help
- Predisposing factors:
 - History of trauma
 - Walking barefoot
 - Agricultural work
 - Poor personal hygiene
 - Poor nutrition
 - Wounds or multiple infections



Actinomycosis

- Cervicofacial (lumpy jaw)
- Dental, oral hygiene (caries, infection)
- neoplasm, radiation
- Painless, occasionally painful,
- Swelling & discoloration of sub & peri mandibular
- multiple sinuses drain pus: sulfur granules
- trismus



Clinical presentation



actinomycoses

- Abdominal actinomycosis
- surgery, perforated viscus, mesenteric vascular insufficiency, or ingestion of foreign bodies
- Nonspecific symptoms:
 - Low-grade fever
 - Weight loss
 - Fatigue
 - Change in bowel habits
 - Vague abdominal discomfort
 - Nausea
 - Vomiting
 - Sensation of a mass

actinomycoses

- Thoracic actinomycosis
- Risk factors: seizure disorder, alcoholism, and poor oral hygiene.)
- Dry or productive cough, occasionally blood-streaked sputum, shortness of breath, chest pain
- Fever, weight loss, fatigue, anorexia

The causes

Eumycetoma

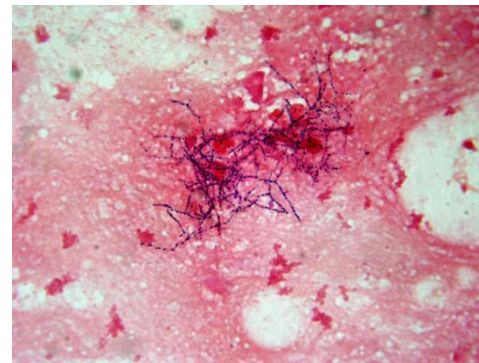
- Fungi:
 - *Culvularia lunata*
 - *Fusarium subglutinans*
 - *Scedosporium apiospermum*
 - *Cladophialophora bantiana*
 - *M. grisea*



S. apiospermum/P. boydii

Actinomycoses

- Bacteria
 - Nocardia
 - Actinomyces



Nocardia

Treatment

Eumycetoma

- Surgical: amputation/radical resection
- Early case: resection with wide margin of healthy tissue is beneficial
- Antifungal:
 - ketoconazole 200-400 mg for 3-36 months
 - itraconazole
- Combination

actinomycoses

- Antibiotics and surgical
- Penicillin G, amikacin, dapson
- Surgical: incision and drainage of abscesses, sinus tracts and recalcitrant fibrotic lesions, decompression of closed-space infections, and interventions aimed at relieving obstruction

M. canis



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