

Dermatomycoses

Dermatomycoses are inflammatory infectious diseases of the skin caused by:

- **dermatophytes** (tinea capitis, tinea corporis, tinea manus, tinea pedis, tinea unguium) - **dermatophytosis**;
- **yeast** (candidosis mucosae oris, candidosis cutis, vulvovaginitis candidosa, balanitis candidosa, paronychia candidosa) - **candidiasis**;
- **malasseziemi** (saprophytic skin mycosis pityriasis versicolor - *Pityrosporum orbiculare* / *ovale*, syn. *Malassezia furfur*) - *keratomycosis*; [1]

In addition to eczema diseases and shin ulcers, dermatomycoses are among the most common skin diseases. Some persistent diseases can signal serious damage to overall or local immunity (diabetes mellitus, immune system disorders, etc.). [2]

According to the location of the pathological process in the skin:

- **keratomycoses** - affect only the stratum corneum epidermis;
- **dermatomycoses** - affect the skin (possibly mucous membranes), nails, or hair;
- **deep mycoses** - affecting the subcutaneous tissue, often internal organs, can be systemic in nature. [3]

Originators

Dermatomycoses can be caused by parasites of plant origin, according to the botanical system they belong to fungi. [3] Their cell wall is composed of chitin, lipids, polysaccharides and cellulose. They have a core, they do not contain chlorophyll. For their growth and multiplication, they require an organic substrate, oxygen, humidity, alkaline environment, a temperature optimally around 36.7 °C. They have an affinity for keratin.

According to morphology:

- fibrous fungi - forming long fibres (hyphae), which intertwine and form mycelium, multiply by spores (conidia),
- yeast - unicellular organisms with budding cells (blastospores);
- some pathogens are dimorphic - they are able to grow in the form of fibrous mycelium and in the form of yeast depending on the conditions;
- both types of spores (conidia and blastospores) tend to be very resistant to external influences.

According to pathogenesis:

- saprophytic - cause diseases only in conditions suitable for them;
- pathogenic - always cause disease;
 - only a small part is pathogenic to humans.

According to epidemiology:

- geophilic (vegetate in soil or on plants) - transmission from soil to humans;
- zoophilic (parasitic on the skin of animals) - transmission from animal to human;
- anthropophilic (vegetate only on human skin) - human-to-human transmission; [4]

Clinical picture

The clinical picture depends on the causative agent and the location of the disease process. Zoophilic species tend to cause acute inflammatory lesions, while anthropophilic species (adapted to humans) tend to cause chronic inflammation. [3]

Risk factors for dermatomycoses:

- work in a hot environment associated with increased sweating;
- use of rubber shoes associated with skin maceration;
- the use of socks made of synthetic fibres, which do not absorb sweat well;
- non-observance of basic hygienic habits - use of foreign shoes, foreign towel [3]

Risk factors for the development of persistent clinical manifestations:

- carbohydrate metabolism disorders (diabetes mellitus);
- cellular immune disorders (cancer including hemoblastosis);
- long-term treatment cytostatics, corticosteroids, or antibiotics (especially candidiasis in this case) [3]

Dermatophytosis

 For more information see *Dermatophytosis*.

Tinea capitis

- originator: *Microsporum (M.) canis*
 - zoophilic dermatophyte
 - the most common reservoir is kittens
- typical for children
- at puberty, the human forehead becomes insensitive to *Microsporum* infection, so tinea corporis develops in adult contacts. ^[1]

Tinea corporis

- affects the hairless part of the face, torso and limbs up to the wrists and ankles
- annular, circinary to polycyclic bearings with raised peripheral rim and central fading
- originators: anthropophilic *Trychophyton (T.) rubrum*, *Epidermophyton (E.) floccosum*; zoophilic (occupational diseases in agriculture) *T. mentagrophytes* (source: rodents), *T. verrucosum* (cattle), *M. canis* (cats, dogs, horses). ^[1]

Tinea inguinalis

- caused exclusively by anthropophilic dermatophytes
- polycyclic to mapped groin deposits with desquamation and a distinct, infiltrated peripheral rim
- significantly itchy
- originators: *T. rubrum*, *T. interdigitale*, *E. floccosum*. ^[1]

Tinea manus

- relatively rare location
- usually does not come separately
- often only one hand is affected
- on the back of the hand looks like tinea corporis
- appearance similar to eczema or psoriasis on the palm - deposits of hyperkeratoses or dyshidrotic vesicles
- microscopic and culture mycological examination is required for diagnosis. ^[1]

Tinea pedis

the most common dermatophytosis

- affects up to 50% of the adult population
- originators: *T. rubrum* (most common), *T. interdigitale*, *E. floccosum*; yeast micromycetes: *Candida*, *Trichosporon*
- ***tinea interdigitalis***
 - begins as redness and whitish maceration in the last toe, itching
 - continues as slight dry desquamation, does not itch, spreads to other interdigital fingers
 - risk of bacterial superinfection with pseudomonads and diphtheria sticks - wetting, erosion, edema to phlegmonous finger inflammation
 - persistent tendency to relapse
- ***tinea plantaris***
 - squamous or vesicular form, severe itching
- consistent local treatment - twice a day, continue for another 2-3 weeks after clinical healing.
- prevention: antihidrotics, air shoes, cotton socks, frequent ventilation of feet, disinfection of shoes with antifungal spray, use of antifungal products after visiting the indoor pool or shared showers ^[1]

Tinea unguium (onychomycosis)

- usually follows the interdigital tinea pedis
- in diabetics, bruising with deformed nails can cause gangrene of fingers ^[1]

Skin candidiasis

 For more information see *Candidiasis*.

- most common agents: *Candida (C.) albicans*, *C. parapsilosis*, *C. tropicalis*, *Trichosporon mucoides*
- commensals on the mucous membranes of the digestive and genital tract
- in the presence of predisposing factors they can significantly multiply (maceration of the skin at the sites of the wet gland, altered skin metabolism in patients with diabetes, immunodeficiency)
- manifestations near orifices (cheilitis angularis, vulvovaginitis, perianal candidiasis)
- manifestations in the areas of the wet gland in the skin folds (candidosis intertriginosa, interdigital candidiasis of the hands)
 - itchy redness with a central ragade, lined with white macerated scales; turbid vesicles to pustules ^[1]

Keratomycosis

Keratomycosis is a disease process affecting only the stratum corneum epidermis.

Pityriasis versicolor

- originator: lipophilic yeast *Malassezia furfur*
- predisposing factors: hyperhidrosis, occlusive clothing, seborrhoea, immune disorders
- light brown macula on unpigmented skin and white macula on pigmented skin
- bearings peel off pityriaziformly when scratched, the scales can be microscopically proven to cause
- usually does not cause subjective problems
- low infectivity transmitted directly or using an infected bed or personal linen
- very frequent recurrences
- the largest reservoir is thatch
- differential diagnosis: vitiligo
- local whole body treatment with antifungal shampoo ^[1] ^[3]

Erythrasma

- originator: *Corynebacterium minutissimum*
- most common locations: wet spots, especially the groin area, occasionally also the armpits
- sharply demarcated reddish-brown, slightly peeling areas; slightly itchy
- more often affects men, especially obese people, who are sweating profusely
- low infectivity ^[3]

Diagnostics

- clinical picture;
- microscopic examination;
- culture mycological examination;
- serology. ^[3]

Treatment

Topical treatment

- **imidazole derivatives** (clotrimazole, bifonazole, econazole)
 - broad-spectrum antifungals
 - bifonazole also has an antibacterial and anti-inflammatory effect, it has good penetration into the deeper layers of the epidermis
- **allylamines** (terbinafine)
 - well effective against dermatophytes
- **polyenes** (nystatin, natamycin)
 - works well against yeasts ^[1]

Systemic treatment

- **ketoconazole**
 - short-term treatment of tinea cruris, tinea pedis, pityriasis Versicolor
 - potentially hepatotoxic, not recommended for children
- **itraconazole**
 - the widest spectrum of effectiveness - effective against dermatophytes and yeasts, including nail plate diseases
- **terbinafine**
 - well effective against dermatophytes, it is also used to treat onychomycosis
- **fluconazole**
 - safest
 - good against yeast, less effective against dermatophytes ^[1] ^[3]

Links

Related articles

- Dermatophytosis
- Mycosis
- Invasive fungal infections
- Antimycotics

References

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