

SPECIFIC CORRELATION BETWEEN CLINICAL FORMS OF MUCOCUTANEOUS CANDIDIASIS AND SYSTEMIC DISEASE

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Abstract: Candidiasis is a primary or secondary mycotic infection caused by members of the genus *Candida*. The clinical manifestations may be acute, subacute or chronic. Involvement may be localized at the level of mouth, throat, skin, genital, fingers, nails, gastro-intestinal tract. In healthy individuals, *Candida* infections are usually due to impaired epithelial barrier functions and occur in all age groups, but are most common in the newborn and in the elderly. They usually remain superficial and respond readily to treatment. Systemic candidiasis is usually seen in patients with cell-mediated immune deficiency, and in those receiving aggressive cancer treatment, immunosuppression, or transplantation therapy.

Keywords: candidiasis

Rezumat: Candidozele cutaneo-mucoase sunt afecțiuni micotice primare sau secundare cauzate de specii ale genului *Candida*. Manifestările clinice pot fi acute, subacute sau cronice, iar localizările predominante sunt la nivelul mucoaselor bucală și genitală, dar sunt frecvente și manifestările cutanate sau la nivelul unghiilor. Infecția cu *Candida* poate surveni la orice vârstă, dar este mai frecventă la nou-născuții și vârstnici. În general sunt forme superficiale și răspund repede la tratament, dar forme cronice recurente sau sistemice se pot întâlni la pacienții cu deficiențe ale imunității mediate celular, afecțiuni cronice, neoplazii. *Candida* se adaptează la exploatarea unor condiții de dezechilibru, astfel încât candidomicoza clinică ar putea fi uneori considerată ca o manifestare a unei tulburări primare mai profunde.

Cuvinte cheie: candidoză

INTRODUCTION

Candidiasis describes a group of yeastlike fungal infections involving the skin and mucous membranes. The infection is caused by *Candida* species, typically *Candida Albicans*.

Oral candidiasis

The most commonly used classification of oral candidiasis:

- acute pseudomembranous candidiasis (thrush)
- acute atrophic (erythematous) candidiasis
- chronic hyperplastic candidiasis
- chronic atrophic (erythematous) candidiasis

Acute pseudomembranous candidiasis (thrush) – may be observed in healthy neonates or in persons in whom antibiotics, corticosteroids, or xerostomia disturb the oral microflora. Oropharyngeal thrush occasionally complicates the use of corticosteroid inhalers. Immune defects (HIV infection), immunosuppressive treatment, cancer and diabetes may predispose patients to candidal infection

Erythematous candidiasis – may cause a sore red mouth, especially of the tongue, in patients taking broad-spectrum antimicrobials. It also may be a feature of HIV disease. Medial rhomboid glossitis is a red patch occurring in the middle of the dorsum in the posterior area of the anterior two third of the tongue and especially is observed in smokers and in those with HIV disease.(10)

The following factors affect candidal carriage and infection:

- Carriage is more frequent in females than in males and during the summer months;
- Increased carriage rates are seen in immunocompromised states (HIV infection), blood group O and nonsecretion of blood group antigens in the saliva possibly mediated by an effect on *C. Albicans* adhesion to epithelia;
- Carriage of yeast is higher in acidic saliva;
- Use of psychotropic drugs that cause xerostomia increase carriage of candidal organisms;
- *Candida* counts increase during sleep but are reduced by eating a meal and by brushing the teeth. *C. Albicans* counts consistently are low in early morning saliva specimens from edentulous patients not wearing dentures. When dentures are worn at night, the early morning saliva candidal count is high;
- Smoking affects candidal infections. Smoking commonly underlies multifocal candidiasis and median rhomboidal glossitis;
- Tetracycline therapy: *Candida* species can be isolated from the oral cavity with greater prevalence and in greater numbers during tetracycline therapy;
- Topical, systemic and aerosolized corticosteroid use may result in oral yeast infection;
- Diabetes mellitus;
- Ecologic balance disruption (bacterial suppression, alteration of salivary flow, immunologic deficit);
- Similarities between carriers and noncarriers of *C.*

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Albicans with respect to ages, caries experience, periodontal status and intraoral temperature indicate that these factors do not influence candidal carriage significantly.(1,2,6)

Oropharyngeal candidiasis

This form is known more commonly as oral thrush and is considered to be a minor problem. Without treatment this can lead to a chronic condition that can result in discomfort and anorexia. Rarely, oropharyngeal infection leads to systemic candidiasis.

- oropharyngeal candidiasis in the neonate most commonly is acquired from the infected maternal mucosa during passage of the infant through the birth canal
- oropharyngeal is the most common type of clinical presentation in infants and children. Immaturity of host defenses and incomplete establishment of the normal orointestina flora are likely reasons why *C. Albicans* often acts a pathogen in the neonate. Beyond the neonate age, *C. Albicans* is considered a normal constituent of the oral and intestinal flora
- Candidiasis of the nipple in the nursing mother is associated with infantile oropharyngeal candidiasis.(7,9)

Candidal vulvovaginitis

Vulvovaginal candidiasis is a common condition in women, often associated with the use of broad-spectrum antibiotics, the third trimester of pregnancy, low vaginal pH, diabetes mellitus. Sexual activity and oral contraception may also contributing factors and infections may extend to the perineum, the vulva and the inguinal area. Chronic refractory vaginal candidiasis associated with oral candidiasis, may also be a presentation of HIV infection. Although most candidal infections occur more frequently with advancing age, vulvovaginitis is unusual in older women. In the absence of estrogen stimulation, the vaginal mucosa becomes atrophic, producing less glycogen. Candidal colonization of vaginal mucosa is estrogen dependent and decrease sharply after menopause. The widespread use of hormone replacement for reduction of osteoporosis and heart disease may cause an increasing trend in candidal vulvovaginitis among older women.

Candidal balanitis

In cases of balanitis, diabetes mellitus should be excluded and the sexual partner should be investigated for vulvovaginitis. Infections are more commonly seen in uncircumcised men and poor hygiene may also be a contributing factor (8).

Candidal diaper dermatitis

Infants with oropharyngeal candidiasis invariably harbor *C. Albicans* in the intestine and faces (85-90%). In most patients, candidal diaper dermatitis is the result of progressive colonization from oral and gastrointestinal candidiasis. Moist macerated skin is particularly susceptible to invasion by *C. Albicans*. Additional factors that predispose infants to candidal diaper dermatitis include:

- local irritation of the skin by friction

- ammonia from bacterial breakdown of urea
- intestinal enzymes
- detergents, disinfectants(3)

Intertrigo

Intertriginous candidiasis is most commonly seen in the axillae, groin, inter and submammary folds, intergluteal folds, interdigital spaces, umbilicus. Moisture, heat, friction and maceration of the skin are the principle predisposing factors in the normal patient, however obesity, diabetes mellitus, warm water immersion or occlusion of the skin and the use of broad-spectrum antibiotics are additional factors.

Paronychia

Candida organisms occasionally cause infection in the periungual area and underneath the nail bed. *Candida* species (not always *C. Albicans*) can be isolated from most patients with chronic paronychia. Immediate contact dermatitis to food allergens may play a role in the pathogenesis of the condition as well. Progression to total nail dystrophy has been associated specifically with *C. Albicans* and usually has been limited to women with Cushing syndrome and Raynaud disease. Disease is more common in people who frequently submerge their hands in water and usually is not associated with elderly population. One important exception to this generalization is represented by the diabetic patients. Chronic *Candida* onychomycosis often causes complete destruction of nail tissue and can be seen in the patients with chronic mucocutaneous candidiasis or other underlying factors that affects immunologic status of the host: diabetes mellitus, hypoparathyroidism, Addison's disease, dysfunction of the thyroid, malnutrition, malabsorption and malignancies.(4,5).

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