1. Клінична медицина: досвід і нововведення

**SKIN LESION IN DEEP MYCOSES AGAINST THE BACKGROUND OF HIV/AIDS**

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One of the earliest markers of HIV/AIDS infection is the skin lesion caused by fungi. Deep mycoses develop in the spread of infection from the skin to the underlying tissues, or as a result of hematogenous dissemination [1,2,3].

COCCIDIOIDOMYCOSIS

According to the classification, one can distinguish between the following forms of coccidioidomycosis [4]: • Asymptomatic infection; • Acute pulmonary coccidioidomycosis (valley fever); • Disseminated coccidioidomycosis (skin, bones and joints, meningitis)

In acute pulmonary coccidioidomycosis on the skin, one can observe widespread erythema, morbilliform rash. Urticaria, erythema nodosum, polymorphic erythema may be present.

Disseminated coccidioidomycosis is characterized by papules, pustules, plaques, nodes, abscesses, cellulitis, multiple fistulas, ulcers, warty growths, granulomas, scarring. As a rule, it develops when the level of CD4 cell count is below 200 mcl-1.

The primary skin lesion is extremely rare. In the site of pathogen permeation, there is a node which subsequently ulcerates. Sometimes lymphangitis and regional lymphadenitis develop.

Skin rash is usually localized in the central part of the face, especially in the area of nasolabial folds, limbs. In acute pulmonary coccidioidomycosis, mucous membranes are usually affected.

Additional research methods are pathomorphological study of the skin, as well as bacterial inoculation.

For inoculation of Sabouraud's medium, pus or biopsy material is used. Diagnosis is confirmed by detection of spherules in sputum or pus; identification of Coccidioides immitis colonies in the culture; results of skin biopsy.

Treatment is carried out by antifungal agents: fluconazole (200-400 mg/day per os) or itraconazole. In life-threatening conditions, Amphotericin B is prescribed intravenously [4].

In HIV, lifelong prophylactic treatment with antifungal drugs is needed.

HISTOPLASMOSIS

Histoplasmosis is the endemic disease with clearly limited geographical distribution. The peculiarity of histoplasmosis in AIDS is the possibility of its development, both in endemic and non-endemic areas. The pathogen is Histoplasma capsulatum.

The disease is common among HIV-infected. Histoplasmosis in AIDS takes the form of generalized infection with lesions of many organs, including the skin.

Classification of histoplasmosis [4]:

1. Pulmonary histoplasmosis: a) Acute pulmonary histoplasmosis (often asymptomatic); b) Chronic cavernous pulmonary histoplasmosis; c) Other forms of pulmonary histoplasmosis

2. Disseminated histoplasmosis: a) Acute disseminated histoplasmosis; b) Chronic disseminated histoplasmosis

In HIV-infected patients, disseminated histoplasmosis occurs in the significant reduction CD4-lymphocytes number. In acute pulmonary and disseminated histoplasmosis, eruptions on the skin can be observed. Cutaneous manifestations are nonspecific.

In disseminated histoplasmosis, rash is the result of skin damage by the pathogen. It is usually observed in 10% of HIV-infected patients. These may be erythematous patches, red papules and nodes stratum or necrotizing pustules, plaques, covered with vegetations; erythroderma, cellulitis. Most often, these are multiple red scaly papules on the trunk and arms, resembling parapsoriasis guttata. In adrenal glands damage, diffuse hyperpigmentation develops due to adrenal failure.

Regardless of the form of histoplasmosis, lesions are usually located on the face, trunk, extremities. Very often, the mucous membranes of the mouth, epiglottis, vestibule of nose are involved in the process.

Microscopy. The pathogen can be detected in Giemsa stained smears from biopsy material, in sputum and bone marrow smears.

Inoculation. For inoculation, blood, urine, bone marrow, biopsy material from skin, mucosa, liver, lymph nodes, and lungs are used.

Defining Histoplasma capsulatum antigens. Determination of titer of Histoplasma capsulatum polysaccharide antigen in the serum of patients is used for diagnosis, evaluation of treatment outcomes and recurrence prediction.

For treatment, itraconazole 200 mg 2 times a day per os or fluconazole 800 mg/day per os for 2 weeks are used.

Secondary prophylaxis of histoplasmosis in HIV-infected patients is conducted by lifelong prescription of itraconazole (200 mg/day per os) or fluconazole (400 mg/day per os).

CRYPTOCOCCOSIS

According to the scientific literature, in 10-15% of HIV-infected patients with cryptococcosis, skin lesions are observed [5].

Eruptions are polymorphic in nature; most often the face and scalp are affected. In less than 5% of patients, the oral mucosa in involved in the process.

Patients with HIV infection are usually characterized by disseminated cryptococcosis with fungemia, damage of the meninges, lungs, bone marrow, skin, mucous membranes of the urinary tract and genital organs, including the prostate gland. There are hepato- and splenomegaly [4].

The clinical picture of cryptococcosis is confirmed by skin biopsy and culture. In smears from biopsies or scrapings from the lesions, treated with potassium hydroxide, Cryptococcus neoformans can be observed.

For inoculation, biopsy materials from skin or CSF are usually taken. If the pathogen is isolated from skin biopsy to evaluate the disease severity, it is necessary to investigate CSF, bone marrow, sputum, urine, prostate secretion. In HIV-positive patients, pathogen is cultured from the blood, sputum, bone marrow, urine.

Treatment of skin lesions in cryptococcosis is carried out with fluconazole 200-400 mg/day per os and itraconazole 400 mg/day per os. Secondary prevention of cryptococcosis in HIV infection is limited to lifelong prescription of fluconazole (200-400 mg/day per os) or itraconazole (200-400 mg/day per os).

SPOROTRICHOSIS (synonym − Schenck's disease)

Men get sick more often, especially with disseminated sporotrichosis. Most commonly, infection occurs when the skin is damaged by spines, thorns, splinters − deep enough for the pathogen to enter the subcutaneous tissue. Getting into the subcutaneous tissue, Sporothrix schenkii multiplies and spreads gradually through the draining lymph vessel. Along this vessel, there are secondary lesions. More rare infection mechanisms are inhalation, ingestion and aspiration of infected material, leading to visceral sporotrichosis. Hematogenous dissemination of the pathogen from the skin or pulmonary lesions is possible [1,4].

The incubation period is an average of three weeks after injury, but may be from 3 days to 12 weeks. Skin lesions are characteristic for the disease. In the place of pathogen permeation, an ulcerated node appears, subsequently accompanied by lymphangitis and regional lymphadenitis. In patients with AIDS, the infection spreads hematogenously from the primary lesion (cutaneous or pulmonary), and disseminated sporotrichosis occurs. Cutaneous manifestations of sporotrichosis may have further symptoms [3].

In cutaneous sporotrichosis, in children usually on the face, and in adults on the hands, sores covered with crusts develop; plaques with warty surface erupt; foci resembling ecthyma and pyoderma gangrenosum appear; papules and plaques on infiltrated base are observed. In disseminated sporotrichosis, generalized rash develops, with the exception of the palms and soles.

Among other organs, the lungs and joints are most commonly affected. Wrist, elbow, ankle, knee joints increase in volume and become painful, often even before the appearance of rash.

For diagnosis, microscopic, cultural and histological studies are used.

Biopsy material is also used for inoculation. Growth of the fungus colonies begins within a few days.

Serological tests are usually uninformative.

Thus, the diagnosis of sporotrichosis is confirmed by clinical and inoculation data.

Treatment. Self-healing of sporotrichosis is uncharacteristic. Itraconazole at 200-600 mg/day is prescribed. The medication is especially effective in lesions of the skin and lymph vessels. It is less effective in the damage of the bones, joints and lungs. Reserve medications are fluconazole 200-400 mg/day, ketoconazole 400-800 mg/day. In disseminated sporotrichosis, with the damage of the lungs, intravenous amphotericin is used.

After completing the course of treatment, relapses often occur. Disseminated sporotrichosis in HIV-infected patients defies treatment and therefore requires lifelong prescription of medications.

Treatment of deep mucoses in HIV/AIDS infection is quite difficult and requires the continuous lifelong use of antifungal medications.

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