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ONYCHOMYCOSIS AND METHODS OF ITS TREATMENT

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Abstract
Onychomycosis is a fungal disease of the nail tissue, a process caused by non-compliance with hygiene rules. This disease is contagious and can be transmitted even to family members. It can be associated with personal belongings and clothing (shoes). gyms, sauna, swimming pools, beauty pools, pedicure items in the salon, as well as sealed shoes. This can lead to negative consequences and adverse situations for patients.

Keywords. Onychomycosis of nails,dermatophytosis, fungus Trichophyton rubrum, Trichophyton mentagrophytes, Epidermophyton floccosum, Scytalidium dimidiatum, Scytalidium hyalinum.

Introduction

Onychomycosis is a popular popular name for nail disease - nail fungus. Caused by pathogenic fungi. Onychomycosis can affect one or more nail plates on the hands or feet. However, the symptoms may be the same.

Nail fungus: Fungi can get on our skin and nails, but not all of them cause disease. People with onychomycosis have fungal spores on their skin and nails, which are the source of the disease. As in healthy and sick people, in inconspicuous places and on various surfaces, objects fall into the bathroom, towels, washcloths, carpets, etc. However, predisposing factors are necessary for the development of onychomycosis. For example, blood supply disorders or innervation of nail plates. This condition is often caused by sports and injury to the nails when wearing shoes that are uncomfortable or the wrong size. Also, the development of onychomycosis can be caused by some chronic diseases (for example, diabetes). You can get nail fungus in pools, shower rooms, baths and saunas, where people walk barefoot. In addition, onychomycosis can be transmitted when others wear shoes (for example, bowling shoes, skating, and others when choosing shoes). Nail fungus. It is better to start the treatment of nail fungus from the first symptoms of the disease.But due to the first changes in the structure of the skin and nails, people rarely turn to a dermatologist. It's

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easy to spot overlooked shapes just by looking at your nails. A serious reason to consult a dermatologist is to identify the following signs: deformed, thickened or thin nails; chipping, layering, splitting of the nail; nail color changes to gray, yellow, white, brown, sometimes green or black. Mycosis of the foot (dermatophytosis) is an infectious disease caused by pathogenic or opportunistic fungi. With mycosis, the skin of the feet itches and the sides of the nails are itchy, reddened and swollen in the severe course of the disease. Mycosis of the feet or dermatophytosis is an infectious disease caused by dermatophyte molds. A total of 43 types of dermatophytes are known, 30 of which cause mycosis of the feet. Most often it is caused by Trichophyton rubrum fungus (90%), Trichophyton mentagrophytes, rarely Epidermophyton fungi. Fungi of the genus Candida and Scytalidium dimidiatum, Scytalidium hyalinum are less likely to cause foot mycosis. All dermatophytes have keratinolytic activity: they are able to dissolve keratin, a fibrous protein that forms the upper part of the skin of humans and animals. In this case, the skin is damaged. After getting on the skin, the fungi are directed to the most vulnerable places - the joints between the cells of the epidermis. There they enter and begin to actively grow. In this case, fungi rarely penetrate deeper than the granular layer of the skin. They are usually only high, with keratinized tissue

is bounded.The causes of foot mycosis are often caused by dermatophytes — red Trichophyton (Trichophyton rubrum), Trichophyton mentagrophytes (Trichophyton mentagrophytes) and scaly epidermophyton (Epidermophyton floccosum) - in the mycosis of the feet. Less often it is provoked by fungi Candida (Candida) and mold (Scytalidium dimidiatum, Scytalidium hyalinum). According to some studies, the proportion of dermatophytes in foot mycosis pathogens gradually decreases. Candida mushrooms come to the fore.Risk factors for Foot mycosis: personal hygiene disorders; exchange of shoes (for example, bowling, skating and ski rental); visiting public baths, swimming pools, beaches; climatic features: in countries with subtropical and tropical climates, there is a high risk of getting sick-increased humidity and environmental temperature are to blame; constantly wearing closed narrow shoes (this happens for military, miners ,textile and Metallurgical Workers); flat feet, calluses, frequent damage; non-compliance with pedicure sanitary rules; violation of; cases of immunodeficiency, including HIV; chronic dermatoses; obesity; diabetes mellitus; chronic venous insufficiency; taking certain medications (systemic glucocorticosteroids).Symptoms of foot mycosis: the symptoms of foot mycosis, as well as the features of treating the disease, depend on its clinical form. Squamous (squamous-hyperkeratotic) form of foot mycosis in most cases, the trigger of the squamous form of foot mycosis is the dermatophyte Trichophyton rubrum. At the initial stage of the disease, the patient is characterized by the fact that after a moderate migration of the skin between the fingers, the disease spreads to the lateral and posterior surfaces of the legs, the skin in the affected areas thickens. Over time, the patient develops onychomycosis — nail fungus. Intertriginosis (interdigital) form of foot mycosis. This form often develops against the background of pronounced sweating of the legs. The disease affects the interdigital spaces and is accompanied by redness, swelling, maceration (softening and loosening of the skin). Erosion and cracks often form. Many patients feel

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itching, overheating, pain. Simultaneous infection of the skin of the feet with dermatophyte fungi is common (usually it is Trichophyton mentagrophytes var. interdigitale) and Staphylococcus aureus bacteria.Dyshydrotic form of foot mycosis: the causative agent of this form of foot mycosis is Epidermophyton floccosum (scaly epidermophyton). The Dystrophic form of foot mycosis,, is more severe and is accompanied by painful itching and pain. Thick Shin blisters appear on the skin. When combined, they form large multi-chamber bubbles, which, after opening, develop into wet erosion of a pink-red color, and then into brown shells. The disease heals for a long time and is often repeated. A characteristic feature of the dystrotic form is damage to the arch of the foot, the InterDigital folds and the skin of the fingers migrate. The process can then spread to the heels, the lower lateral surfaces of the legs, and even the skin under the ankle. If a bacterial infection is added, the patient may develop a fever, damaging the lymph nodes as well. Swelling of the leg occurs and its skin is moisturized. Severe pain occurs and the patient begins to have difficulty walking.Exudative-dyshydrotic form of foot mycosis: often the exudative-dyshydrotic form of foot mycosis originates from the fungus Trichophyton rubrum (red Trichophyton). First, it affects the skin between the fingers. Then the process spreads to the base of the foot, back and side surfaces, nail plates. Blisters and erosion appear on the skin, which are then covered with a crust. The skin can get wet and rot.Deleted form of mycosis of the foot: the deleted form is distinguished by individual researchers. This happens a few days after a fungal infection. The skin on the Interdigital folds begins to itch. In addition, the heel and side surfaces of the legs begin a light Street. Patients may ignore unpleasant symptoms, but they infect those around them.Acute form of mycosis of the foot. The acute form of mycosis of the foot is the result of an exacerbation of the form of dishydrotic or intertriginosis (interdigital). The disease begins sharply: a large number of blisters appear on the skin of the legs, and then on the lower legs. The skin swells. Then nodes are formed in the lower third of the arms and wrists. After the bubbles open, erosion occurs, surrounded by fragments of loose skin. They merge, expand, often blurred the appearance of purulent discharge. The disease is often accompanied by fever, worsening of the general condition of the patient, acute pain in the affected arms and legs. The soot and thigh lymph nodes enlarge and there will be pain.Vesiculobulosis (inflammation) form of foot mycosis: an inflammatory form of foot mycosis, often described as acute. Dermatophytosis can develop from a chronic interdigital form.According to its etiology, the causative agent of the form of vesiculobulosis is the dermatophyte Trichophyton rubrum. The main symptoms are: severe itching, skin rashes, mainly located on the soles of the feet, on the soles and sides of the fingers, on the back of the foot. With superficial blisters, swollen areas may appear. Bubbles can merge or remain unchanged for a long time — if the tires (top) are thick enough. Most often occurs on nail plates and-onychomycosis develops.Ulcerative form of leg mycosis: ulcerative form (in foreign literature it is called Deep) is one of the complications of leg mycosis as a result of the addition of a bacterial infection. Wide deep purulent wounds form at the base of the leg. The patient experiences severe pain and consequently has difficulty walking.Complications of mycosis of the foot: cracks and wounds on the skin that appear

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in the center of mycosis are the gateway for bacterial infections. At the same time, such infections are more difficult to treat — this is due to the fact that fungi produce special substances that increase the resistance of bacteria to drugs. The most common complications of foot mycosis: allergic dermatitis of infectious and drug Genesis; pyoderma-pustular diseases of the skin (cellulite, lymphangitis, phlegmona, osteomyelitis of the bones of the legs), which can lead to deep, long untreated wounds of the skin. Microbial eczema is a chronic inflammatory disease that causes itching and redness of the skin, the appearance of fluid bubbles; general decrease in immunity and impaired microcirculation in the lower extremities (usually develops in patients with diabetes and varicose veins); spread of the disease to the skin and nail plates of the hands; deterioration in quality of life: in acute forms of mycosis, it is difficult to wear shoes, while lymphadenitis leads to fever and discomfort for the patient.Diagnosis of foot mycosis: diagnosis and treatment of foot mycosis is carried out by a dermatologist-mycologist.The doctor admulidaaa assesses the condition of the patient's nails, skin, mucous membranes and hair. Makes a dermatoscopy-studies the skin under magnification. In addition to the examination, the specialist collects Anamnesis and asks the patient about his lifestyle, quality of nutrition, daily habits and care procedures. If mycosis of the foot is suspected, the doctor will prescribe laboratory tests. The study of skin scraping excludes or confirms fungal infections.Foot mycosis: symptoms, treatment, diagnosis.About the disease foot mycosis is characterized by itching, itching and redness on the fingers and soles of the feet. Infection usually occurs in public places: pools, gyms, saunas, since the fungus develops in a humid environment. Mycosis disrupts the aesthetics of the feet and, without treatment, can lead to chronic skin damage, deformation of the nails and secondary infections. To prevent such consequences, it is important to start treatment as early as possible and strictly follow the doctor's recommendations. Other names of the disease: foot fungus, foot trichophytosis, dermatophytosis, athlete's foot. The main symptoms: redness and peeling of the skin of the feet, blisters, swelling, crying, cracks, itching, burning and painful sensations may appear, depending on the form of the disease. Engaged in treatment: dermatovenerologist.Symptoms of foot fungus. Manifestations can vary depending on the stage of the disease, the type of fungus and the individual characteristics of the person. The most common symptoms of foot fungus include: itching and burning (when the fungus between the toes or under the feet starts to itch too much); peeling of the skin (especially in the interdigital spaces, it can be small or large, sometimes the dermis protrudes in large layers, often the legs itch); dryness and cracks(can be painful and easily transmitted); redness ,inflammation (often observed between the fingers and on the sole); wetting (the skin can become wet and soft, this is called maceration); formation of bubbles (they are filled with liquid, ; bad smell (it persists even after washing your feet); pain when walking (if the infection caused cracks, wounds or blisters on the skin). Symptoms of foot fungus can range from mild discomfort to severe skin and nail damage. Early detection of them can prevent the development of chronic infections and complications. In order to prevent the spread of the disease and its transition to a chronic form, it is important to pay attention to the first signs and start treating leg fungi on time.Stages and forms of the disease.Leg

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mycosis is expressed in different forms, each of which has its own characteristics and clinical picture: 1. Squamous shape .It is characterized by increased skin between the fingers and on the base. It can go unnoticed for a long time, as it does not cause obvious discomfort. With this form of mycosis, the skin dries up and becomes covered with small folds,. In some cases, minor redness is observed. It is not accompanied by severe itching or pain, so often patients write down everything for dehydration of the skin. 2.Intertriginosis or interdigital. One of the most common forms occurs in the spaces between the folds of the fingers, usually between 4 and 5 fingers, as well as between 3 and 4 fingers. The fungus between the fingers is especially develops rapidly in conditions of high humidity, for example, with hyperhydros. With it, the skin becomes red, moist and soft, deep painful cracks appear. This form of mycosis is characterized by severe itching and burning. There may be small blisters that can go into pustules and superficial wounds. 3. Dyshydrotic form. It manifests itself in the form of blisters filled with serous or purulent fluid and often affects the soles and lateral surfaces of the legs.. In acute periods, the number of blisters increases, they burst, fluid begins to separate, and painful wounds begin to appear. In general, small bubbles merge into larger ones. The affected areas can itch, burn and become irritated. After the bubbles open, the skin begins to dry out and form dried crusts. 4. Hyperkeratotic. This form is characterized by increased keratinization of the skin, which leads to thickening of the corneum layer of the epidermis. It is often accompanied by permanent thickening of the skin and cracks that are difficult to treat. They can cause pain when walking. In severe cases, the skin begins to peel off in large layers, which is similar to a "follower" or "Indian sock". In the folds of the skin, it makes its pattern more pronounced, and it looks a little dusty. Stages of the disease: initial (symptoms are usually mild, the fungus begins to penetrate the upper layers of the epidermis); progressive (the infection begins to spread to large areas of the skin, the pathogen actively multiplies); chronic (relapses are replaced by remission, require long-term therapy); complex (characterized by the addition of secondary infections, complex therapy with antibiotics and systemic agents is necessary). It is important to understand that foot mycosis not only causes discomfort, but can lead to serious consequences if left untreated. Regardless of the form and stage of the disease, at the first symptoms, it is important to consult a doctor to properly treat the fungus between the toes and soles and prevent the development of complications.Prevention it includes the following measures: wash your feet regularly with soap and wipe them thoroughly, especially between your fingers. Clean and dry socks made of natural materials are needed that allow the feet to breathe. Disinfect it regularly and let it dry. It is preferable to use socks made of natural fabrics, choose cotton or wool materials. Avoid walking barefoot in public places, always wear personal slippers. The use of antiseptics in cases of excessive sweating. Regular examination for redness, rupture and peeling of the legs in order to notice the first signs of infection in time. Before treating foot mycosis, a diagnosis should be made.Patients undergo a full examination from specialists, including laboratory studies and the selection of an individual therapy plan that allows you to quickly get rid of unpleasant symptoms. Modern treatments, including hardware procedures and drug therapy, help to fully recover and prevent relapses.Treatment of

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Mycoses: treatment of mycosis of the foot. Treatment of foot mycosis is carried out in two stages. At the first stage, if there is acute inflammation, lotions are used: aqueous solutions of ichthyol, products with antiseptic properties (Fukortsin, 1% aqueous solution of Diamond Green). Then pastes and ointments containing antifungal and glucocorticosteroid drugs are prescribed. With strong licking (in the acute stage) and with the addition of a secondary infection, anti-inflammatory solutions are used as lotions, as well as combined antibacterial drugs in the form of cream solutions. Therapy involves the use of antimicotic-antifungal agents. At the main stage of treatment, antifungal drugs are used to eliminate fungal pathogens. Most often, such drugs are produced in the form of ointments, or solutions. If the patient is worried about severe itching, the dermatologist may prescribe antihistamines. They are usually taken within 10-15 days, until the unpleasant symptom disappears completely.With damage to the nails, antifungal agents are used-they are applied directly to the nail plate. In this case, the drug accumulates on the surface of the nail and does not enter the bloodstream, eliminating the risk of developing side effects. If external drugs are not affected, systemic antimycotic agents are prescribed.Prognosis and Prevention: with timely referral to a doctor, mycosis of the foot can be prevented: most patients treated with antimicotic drugs get rid of the disease forever. To prevent mycosis, you need to protect the legs and arms from annoying and traumatic factors and strengthen the immune system. Measures to prevent onychomycosis: socks should be worn clean every day and often replaced if the feet are sweaty or wet; ventilate or dry after wearing shoes; use an antifungal uv shoe dryer; do not wear general slippers in public; do not wear shoes in a bare foot shop; use a special foot towel;use special tools for Nail Care, Wear personal or special new shoes; avoid stressful situations.Laser treatment. The laser produces sufficient power and consistent light at a given wavelength, which is selectively absorbed by the irradiated material when projected onto soft tissues. Light warms the tissues and destroys them. Most people with onychomycosis are primarily affected by they try to fight the infection because it does not cause any pain. Treatment is carried out over the years, but the immortality of positive results makes you look for new types of treatment. Often patients care about the aesthetic aspect, so they do not wear open shoes (if the fungus has only affected the toenails). Laser treatment of nail fungus is one of the most effective methods today. Its advantages include: high efficiency and painlessness; absence of a recovery period; there is no safety and age limit; it does not cause allergic reactions. It must be said that the complete destruction of the fungus does not occur immediately. The doctor cannot say exactly how many sessions are needed. For some patients, two Irradiations are sufficient, but to prevent re-infection, it is recommended to carry out 3-4 sessions at intervals of 1-2 weeks. Previously, this type of fungus was considered only a cosmetic defect. But today, due to the principle of spread, it is customary to classify it as a real medical problem.Recommendations during the treatment of nail fungus fungus fungus fungus. The patient should understand that the nail fungus affects the nails for several months or even years, so there is no immediate treatment. In addition, the treatment of the fungus on the fingernails can last for several months. The positive side of modern treatment is a 100% result and a small probability of complications. Patients with onychomycosis

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should achieve an optimal therapeutic effect and avoid old habits and learn a healthy lifestyle to prevent re-infection. The patient is in this position: he should wear loose shoes.Cut nails short, do not walk barefoot in public places; do not wear someone else's shoes; shoes should be cleaned once a week with antifungal powder. In conclusion, it should be noted that at the moment there are more than 50 species of fungi. In addition, dermatitis with onychomycosis, eczema. Most often, metabolic disorders manifest as nail fungus. Only a specialist can make the correct diagnosis and choose effective treatment. Thanks to modern medicine, the fungus can be completely cured. However, do not delay, because onychomycosis is an infectious disease that can affect all family members.The gold standard for the treatment of onychomycosis in both children and adults is enteral antifungal therapy.Systemic drugs are more effective than topical agents and allow you to achieve the desired result faster. They are recommended for all types of onychomycosis, especially when more than half of the nail surface is damaged, several nail infections, damage to the nail matrix, or dermatophytoma are present. Enteral antifungal drugs used in combination with topical antifungal agents increase the rate of treatment. In some cases, the course of treatment may need to be repeated, especially in patients diagnosed with chronic onychomycosis. Local antifungal therapy involves the use of creams, varnishes and nail solutions. Usually, local remedies have a good effect, side effects are minimal, and there may be redness around the nail and a feeling of overheating at the place of application. Topical therapy requires longer courses (often 4-8 weeks or more) and may be less effective than oral treatment, possibly because topical medications do not penetrate deep enough into the nail plate. In some cases, the affected nail plate is crushed, cut or completely removed. In addition, keratolytic agents (urea or salicylic acid) are used to facilitate the delivery of topical antifungal drugs to nail thickness and increase the effectiveness of treatment. To prevent re-infection, shoes should be dried daily and treated regularly with products with fungicidal activity. You can use tools to treat shoes with ultraviolet. Onychomycosis is the most common nail disease found in clinical practice. Its importance goes beyond aesthetics, often causing pain, ambulation and difficulty in carrying out daily activities and compromising the quality of life. Many patients do not achieve treatment with antifungal monotherapy, and relapses are common. Combined therapy has therefore been of great interest given its potential to prevent drug synergy and antifungal resistance, but it has not been well studied. A systematic review of only onychomycosis drugs, as well as drugs and procedural (laser, debridement, photodynamic therapy), clinical or randomized controlled trials evaluating a combination against monotherapy, was carried out. After the exceptions, 30 studies were included in the final analysis. There were conflicting results for drug-only trials, some showing the great benefit of combined therapy over monotherapy, but the trials were not solidly developed and did not have sufficient follow-up. Procedural studies also lacked long-term follow-up and were unable to demonstrate efficacy in some severe cases of onychomycosis. Taking into account the high treatment rates shown in Antifungal monotherapy trials and the opposite results associated with combined therapy, costs and safety concerns, we recommend

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maintaining combined therapy as secondary treatments for patients with poor prognostic factors or for those who have failed monotherapy for onychomycosis.

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