

OPTIMIZATION OF THE TREATMENT OF PATHOLOGICAL DRYNESS OF THE SKIN

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Abstract: Xerosis (xerosis) of the skin - abnormal dryness of the skin, usually due to hyposcretion of the sebaceous glands (changes in the hydrolipid balance of the skin), which is the main cause of itching, and in some cases - infectious diseases of the skin. Skin xerosis is the main symptom of most dermatological diseases: it is present in patients with atopic dermatitis, psoriasis, seborrheic dermatitis, ichthyosis, follicular keratosis, irritant hand eczema, etc.

Keywords: pathological dryness, abnormal dryness, hyposcretion, dermatology, atopic dermatitis, psoriasis, seborrheic dermatitis, ichthyosis, follicular keratosis, irritant hand eczema.

ОПТИМИЗАЦИЯ ЛЕЧЕНИЯ ПАТОЛОГИЧЕСКОЙ СУХОСТИ КОЖНЫХ ПОКРОВОВ

Аннотация: Ксероз (ксероз) кожи - аномальная сухость кожи, как правило, вследствие гипосекреции сальных желез (изменения гидролипидного баланса кожи), что является основной причиной зуда, а в ряде случаев - инфекционных заболеваний. кожи. Ксероз кожи является основным симптомом большинства дерматологических заболеваний: он присутствует у больных атопическим дерматитом, псориазом, себорейным дерматитом, ихтиозом, фолликулярным кератозом, раздражительной экземой рук и др.

Ключевые слова: патологическая сухость, аномальная сухость, гипосекреция, дерматология, атопический дерматит, псориаз, себорейный дерматит, ихтиоз, фолликулярный кератоз, раздражающая экзема рук.

INTRODUCTION

The clinical symptoms of xerosis are the appearance on the surface of the skin of a large number of grayish-white scales of various sizes (from small to large), which is often accompanied by areas of redness and coarsening of the skin. Against this background, superficial and sometimes deep cracks can be observed. The skin becomes dull, lifeless, rough, rough and hard to the touch. Its owner experiences pronounced discomfort in the form of tightening, tingling, itching and even pain.

This is explained not only by the fact that when the stratum corneum is damaged, its permeability increases and microorganisms, toxins, allergens begin to actively penetrate the skin (while water, on the contrary, actively begins to leave the epidermis), but also by the fact that the damage to the stratum corneum is large. skin stress.

MATERIALS AND METHODS

The structural and functional health of the skin is largely related to the content and distribution of water in it. Dry skin leads to its easy permeability to toxic and sensitizing substances, contributes to the development of immune disorders and the formation of allergic inflammation (4). Violation of hydration of the stratum corneum of the epidermis is the main cause of pathological desquamation of the epithelium and xerosis. Since corneocytes are cells lacking a nucleus, dermatologists have not treated the stratum corneum with due attention until recently.

But it turned out that by acting on the stratum corneum, one can not only achieve cosmetic effects, but also alleviate the symptoms of a skin disease, improve the result of drug treatment and improve the patient's quality of life.

Numerous structures are involved in maintaining the water balance, which regulate the rate of transepidermal water loss and carry out the flow of water from the dermis to the epidermis. Obviously, for the full functioning of the skin, the supporting structure of corneocytes is necessary, and if it is disturbed, transepidermal water loss increases, which leads to epidermal hyperplasia and hyperkeratosis.

The stratum corneum serves as a sensor for the underlying layers(2). In the epidermis, water balance is controlled by the stratum corneum and components of the stratum corneum of the epidermis (natural moisturizing factor, skin lipids, sebum and keratin) (4). In addition to the structures of the epidermis itself, an important role in the implementation of the barrier function of the skin is played by the hydrolipid mantle, which consists of cholesterol, ceramides and unsaturated fatty acids (omega-3, omega-6), the amount of which is in a strictly defined proportion relative to each other.

If the corneocyte contains only 3% lipids, then the intercellular cement - 80%. According to biochemical data, the extracellular matrix contains: ceramides - ~40%, free fatty acids - ~20%, cholesterol and its esters - ~10%, cholesterol - ~15%, phospholipids - ~5%, squalene - ~10% (3). Cholesterol prevents excessive rigidity and fragility of the ceramide layer. Free fatty acids are located around ceramides in the lipid layer and help maintain the water-repellent function of the skin, protect the water-soluble components of the stratum corneum from leaching due to the formation of a water-oil emulsion (9).

If this proportion changes, the lipid layer between the horny scales is broken and, as a result, the barrier function is broken, moisture evaporates more intensively. In an attempt to prevent excess moisture loss, the skin slows down the process of physiological desquamation, and cells begin to accumulate on the surface. Outwardly, this is manifested by excessive peeling, thickening of the stratum corneum, and a grayish tint.

Dry skin, or xerosis, occurs in 48–98% of patients with atopic dermatitis (8). In this case, the defect in the barrier function of the skin is mainly considered as a consequence of inflammation. However, it has been alternatively hypothesized that xerosis (11), impaired skin barrier permeability (5) or both may be the leading pathogenic mechanisms in atopic dermatitis and other inflammatory skin diseases (6).

To ensure optimal barrier function of the skin, the presence of a sufficient amount of extracellular lipids is necessary, which form a lamellar bilayer structure in the epidermis. Of the variety of lipids, nature has selected three types to build the lipid barrier of the skin: ceramides, free fatty acids and cholesterol.

To maintain the integrity of the lipid layers of the skin and their physical and chemical properties, the right balance between saturated and unsaturated fatty acids is necessary.

Unsaturated fatty acids are not synthesized by the human body and therefore must be obtained from external sources. These acids form the basis of many cellular structures and body tissues. One of their most important functions is the construction of cell membranes. On the other hand, these substances are the main structural elements in the biosynthesis of other biologically active compounds, in particular, prostaglandins, leukotrienes, thromboxanes, etc., maintaining a delicate balance between immune, inflammatory and other body responses (9).

Polyunsaturated fatty acids are a unique class of organic compounds that play an important role in biological systems. Research over the past four decades has revealed a wide range of their functions in living organisms. PUFAs undergo biotransformation by lipoxygenases or cyclooxygenases, which leads to the formation of numerous low-molecular regulators of processes occurring in cells, tissues and the body as a whole (7).

The therapeutic effects of omega-3 fatty acids described by researchers are usually achieved with higher doses of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which can only be obtained using encapsulated concentrates of EPA and DHA esters of fish oils.

Eicosapentaenoic fatty acid - belongs to the polyunsaturated fatty acids of the Omega-3 series. Contained in vegetable oils and fish fats. It is part of the membranes of all cells of the body, prostaglandins, eicosanoids and many other mediators of metabolism.

It enhances the effectiveness of the body's antioxidant systems, normalizes the processes of lipid transport in the bloodstream, provides effective repair of cell membranes, activation of immunocompetent cells, improves the absorption of fats in the gastrointestinal tract. It is effective for hyperlipoproteinemia, hypertension, a tendency to thrombosis, diabetes mellitus, bronchial asthma, skin diseases, immunodeficiency states.

Docosahexaenoic acid - refers to Omega-3 polyunsaturated fatty acids, which are essential nutrients, because they are not formed in the human body. Omega-3 PUFAs - eicosapentaenoic acid and docosahexaenoic acid play an important role in ensuring the vital activity of the human body. Omega-3 PUFAs form an adequate response of body cells to the action of external pathogenic factors, regulate lipid metabolism, prevent the development of inflammation, the formation of blood clots, and heart rhythm disturbances. Omega-3s also perform a structural function - they are a substance without which the formation of cell membranes is impossible: brain cells, the retina of the eyes and male germ cells - spermatozoa especially need them. With a normal content of Omega-3, nerve impulses are quickly transmitted from one neuron to another, the brain and the entire nervous system work smoothly and efficiently; spermatozoa retain a high ability to conceive, the heart works perfectly, and the vessels remain in excellent condition for a long time. Other functions of Omega-3 are energy and storage. During the passage of biochemical reactions, Omega-3s are also used as fuel: it is known that fats provide energy to our body, and polyunsaturated fats are the most necessary in this sense. With a deficiency of Omega-3 fatty acids, symptoms such as dry skin and itching, brittle nails and hair, fatigue and weakness, constipation, muscle and tendon pain, frequent colds, absent-mindedness, depression appear, but most people suffering from this deficiency, they cannot understand what is happening to them - after all, these symptoms can manifest themselves in many diseases; By the way, many diseases are also caused by omega-3 deficiency. Omega-3s are not produced in the body, and they also need to be consumed externally, like vitamins.

Omega-3 PUFAs in capsules have a therapeutic effect on the skin in diseases such as psoriasis, eczema, atopic dermatitis; they accelerate the healing of wounds and scars, and are also used for cosmetic problems - dry dull skin, brittle hair.

To date, the drug that meets all the requirements for the treatment of dry skin is a combination of polyunsaturated fatty acids of the omega-3 family with a natural source of vitamin E-wheat germ oil.

Wheat germ oil is a source of vitamin E, which causes antioxidant involved in tissue respiration and other important processes of tissue metabolism; protects cells and tissues from the damaging effects of excess free radicals and lipid peroxidation products.

The addition of 3 capsules of a combination of polyunsaturated fatty acids of the omega-3 family with a natural source of vitamin E to the diet will satisfy the daily need for essential omega-3 fatty acids. The production technology ensures the effectiveness of the formula: guaranteed content of eicosapentaenoic and docosahexaenoic acids, the presence of vitamin E as an antioxidant that protects active substances from destruction. Vitamin E and its derivatives increase skin elasticity and retain water to promote hydration (10)

Olive oil has a formula that is simply ideal for vegetable oil: a maximum of monounsaturated, easily digested fats and a minimum of hard, saturated ones. In addition, olive oil contains a unique vitamin complex, including vitamins A, D, E. The content of vitamin E helps the body to better absorb vitamins dissolved in fats.

Used to care for dry, inflamed skin. It helps to fix and preserve moisture in the skin, has a disinfectant and wound healing effect, heals ulcers, damaged tissues, bruises, insect bites. Excellent hair and nail care product.

RESULTS

The antiseptic and regenerating properties of ozonated olive oil are many times more active, it can penetrate into tissues, give them active oxygen, thereby improving blood circulation in them, activating metabolic processes, helping to accelerate the granulation and epithelization of pathological foci.

In our studies, we used ozonated olive oil obtained by bubbling 50 ml for 60 minutes. with an ozone concentration of 2.5-3 mg / l., in the form of applications. It is one of the widely used methods of ozone therapy due to its simplicity and availability (1).

25 patients under observation with various dermatological diseases, accompanied by dryness and flaking of the skin, the formation of crusts and cracks with varying degrees of severity. received the main treatment in accordance with dermatological protocols for the treatment of skin diseases with the addition of a combination of polyunsaturated fatty acids of the omega-3 family with a natural source of vitamin E, which patients took orally 1 capsule 3 times a day for two months.

DISCUSSION

At the same time, to eliminate dry skin, peeling and excessive keratinization, ozonized olive oil was locally used in the form of daily applications on the lesions. The change in objective and subjective sensations of patients was assessed on the 1st, 5th, 10th and 14th days.

All observed patients tolerated the treatment well, some patients complained about the smell of topical application of ozonized oil. So, on the 5th day of complex therapy using capsules, a combination of polyunsaturated fatty acids of the omega-3 family with a natural source of vitamin E- and ozonized olive oil, patients noted a significant decrease in the severity of dry skin, swelling and flaking. On the 10th day, crusts and peeling disappeared, soreness disappeared as a result of healing of cracks. High rates of positive changes were found in 90% of patients.

CONCLUSIONS

Thus, the use of pathogenetically substantiated therapy with a combination of polyunsaturated fatty acids of the omega-3 family with a natural source of vitamin E- and the external use of ozonized olive oil has a positive clinical effect in the treatment of patients with xerosis. At the same time, good tolerability of drugs and the absence of side effects were observed.

The obtained results of the study give grounds to recommend a combination of polyunsaturated fatty acids of the omega-3- family with a natural source of vitamin E- and ozonized olive oil as an alternative method of external therapy for patients with xerosis.

Along with the noted effectiveness of therapy, it is necessary to emphasize the possibility of using it primarily on an outpatient basis, with a limited set of general and external medical agents, which is beyond doubt in the prospective achievement of a social and economic effect.

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