

Naphthalan-based medications in a complex therapy for psoriasis

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Psoriasis takes one of the leading positions in the structure of skin pathology. Its share among the out-patients of the dermatological profile is approximately 5%, and is up to 22% among patients of dermatological hospitals [1]. The total occurrence of psoriasis tends to increase, and currently this indicator for Moscow Oblast has reached 161.6 per 100,000 population. In recent years, an increase in the occurrence of psoriasis was noted, an increase in the frequency of therapy-tolerant forms of dermatosis, which signifies not only medical but also a social value of the problem.

Psoriasis is a multifactorial disease, which is based on genetic breakdowns occurring under the effect of several of environmental factors [2], the leading of which is nervous stress. At the beginning of the cytokine cascade, produced by activated T - lymphocytes, there is an alpha tumor necrosis factor, which triggers all the following changes [2]. The expression of adhesion molecules in skin increases, they involve new - neutrophils and T - lymphocytes - leukocytes into the focus of inflammation. These cells increase the expression of monocyte-derived neutrophil chemotactic factor (IL-8), affect keratinocytes proliferation, induce the expression of anti-leukoproteinase [3,4] As a result, these changes form typical psoriatic papules and plaques based on infiltration and thickening of the epidermis due to enhanced growth of its cells. The second important mechanism for the formation of psoriatic focus is the keratinocytes differentiation disruption [5]. Psoriasis indicates significant disruption of keratin 1 and 10 expression. Naturally, they are responsible for the normal formation and functioning of parabasal layers of cells, while psoriasis reveals negative expression of such keratins, which leads to cell differentiation disruption. Moreover, disrupted expression of keratin 1 and 10 stimulates proliferation of keratinocytes, exacerbating cytokine stimulation [5,6].

One of the aspects of the disease pathogenesis is a disruption of the epidermal barrier function, whereby its prominence correlates with disease morbidity [7]. Skin of patients with psoriasis denotes a defect in filaggrin protein production, brought about by gene mutations in 1q21 chromosome. These changes result in sharp disruption of the terminal differentiation of keratinocytes process, which leads to the epidermal barrier insolvency [7]. Histological and molecular skin features of laboratory mice with protein defects responsible for building the epidermal barrier are similar to changes in patients' with psoriasis skin [8].

The results of the latest study showed disruption of the expression caused by psoriatic keratinocytes of S cathepsin, protein-degrading enzyme responsible for intercellular interaction. Its defect leads to increased degradation of intercellular interconnections, which aggravates exfoliation and makes epidermal barrier thin [9]. In addition, in psoriasis affected skin, there is an imbalance of lipids forming the intercellular layer of corneocytes, due to a sharp decrease in the number of ceramides and an increase in the proportion of fractions containing sphingosine [8].

A number of cytokines involved in psoriasis immunopathogenesis affect neoangiogenesis in affected skin. Proangiogenic properties have tumor necrosis factor, interleukin 8, interleukin 17, imbalance between angiogenesis stimulating factors and their inhibitors, which leads to the formation of new vessels and changes in microcirculation [10]. The presence of it is reflected in morphological study of a large number of enlarged vessels.

The complex of measures for psoriasis treatment should be primarily focused on the main pathogenetic mechanisms and include the suppression of inflammation, proliferation of keratinocytes, normalization of their differentiation, normalization of microcirculation, restoration of disrupted epidermal barrier [11,12].

The first line of topical psoriasis therapy medications are topical glucocorticosteroids and synthetic analogues to vitamin D3, able to reduce immune inflammation in the dermis and eliminate the imbalance between proinflammatory and anti-inflammatory cytokines, suppress proliferative activity of keratinocytes and normalize their differentiation [13]. Inclusion of normalizing microcirculation and restoring epidermal barrier medications into the complex therapy allows to achieve a greater efficiency of topical therapy. At present, it is proposed to include the medications of so-called "basic care", which have moisturizing, protective properties and can be used during a long period and significantly support the skin of patients with psoriasis condition during remission period, into the complex therapy for psoriasis. [14].

Russia dermatologists have gained a rich experience in using the therapy for skin diseases, including psoriasis, naphthalan oil, healing properties of which are defined by naphthenic hydrocarbon with an intense anti-inflammatory effect due to stimulation of steroid hormones natural biosynthesis and activation of inflammation mediators synthesis. Besides, it activates the tissue metabolism, normalizes hemolymph drainage, stimulates trophic functions. Resin-free naphthalan is one Losterin cosmetic line main components, presented in cream, shampoo, and shower gel. Losterin medications are recommended for different skin diseases, such as psoriasis, eczema, atopic dermatitis, contact dermatitis, ichthyosis, xerosis. Besides naphthalan (3%), Losterin cream also contains urea (10%), salicylic acid (0,1%), D-panthenol (1,5%), Japanese pagoda tree infusion (1%), and almond oil (9%). Urea (10% concentration) possesses moisturizing and keratolytic properties, helps epidermis cells to preserve the moisture and promotes exfoliation of diskeratization of keratic masses. Salicylic acid (0,1%) performs anti-inflammatory action. D-panthenol (pro-vitamin B5) stimulates regeneration of affected skin. Japanese pagoda tree possesses unique properties – it's a complex of flavonoids, which stabilizes vascular wall, normalizes microcirculation and reduces swelling. Almond oil regulates epidermis lipid and water balance by moisturizing and nourishing it.

Except for resin-free naphthalan, Japanese pagoda tree infusion and almond oil, Losterin shampoo contains an infusion of burdock root, which has been known for a long time and has been widely used for strengthening of hair roots, reducing scalp inflammation, dandruff elimination. Losterin shower gel contains resin-free naphthalan, Japanese pagoda tree infusion, natural soothing and moisturizing oils (jojoba, linseed, olive oils). Composition of Losterin cosmetic line components allows to use it effectively for patients with psoriasis.

The goal of present study is the effectiveness and safety of Losterin cream, shampoo and shower gel application in a complex therapy for the patients with plaque psoriasis.

Materials and methods. There have been 30 patients with psoriasis vulgaris under the supervision – 17 men and 13 women aged from 17 to 80. The sickness duration has been from 6 to 24 months. All of the patients had pathological process being treated in hospital, PASI index varied from 12,3 to 17, 6 (average equal to 15,1), and was evaluated as moderate to severe. All patients has plaques on smooth skin surface, scalp, 7 of them had the process formed on palm skin. Antisensitizers, hepatoprotectors, antihistamines, group B vitamins were used as a traditional complex therapy. The external treatment was performed in a following matter: first two weeks – glucocorticosteroids applied on a smooth skin twice a day, Losterin shampoo applied on scalp once a day, Losterin shower gel used for skin cleansing daily. After two weeks

of therapy patients used only Losterin medications externally: cream for a smooth skin - twice a day, shampoo for scalp - every other day, shower gel – daily.

Starting from week six of therapy, patients were using cream and shower gel daily, shampoo – twice a week. This therapy took place for 12 weeks, after that patients used Losterin medications at their own convenience. It is important to note, that after 10-15 mins of Losterin shampoo application, it was washed off with a regular cosmetic shampoo.

Dynamic surveillance was performed for 12 months. During the treatment, there was a control over the patients following prescriptions, and the therapeutic effectiveness was evaluated on day 4 and day 12 after the treatment, the distant results were evaluated up to 12 months. Evaluation methods included the seriousness of psoriasis clinical demonstrations (hyperaemia, infiltration, exfoliation, cracks) based on rating and PASI index. The criterion for therapeutic effectiveness was regress of the clinical sickness demonstration and PASI index reduction (significant improvement – reduction by 75% and more, improvement – reduction by 50% - 75%, insignificant improvement – reduction 25% - 50%).

Results.

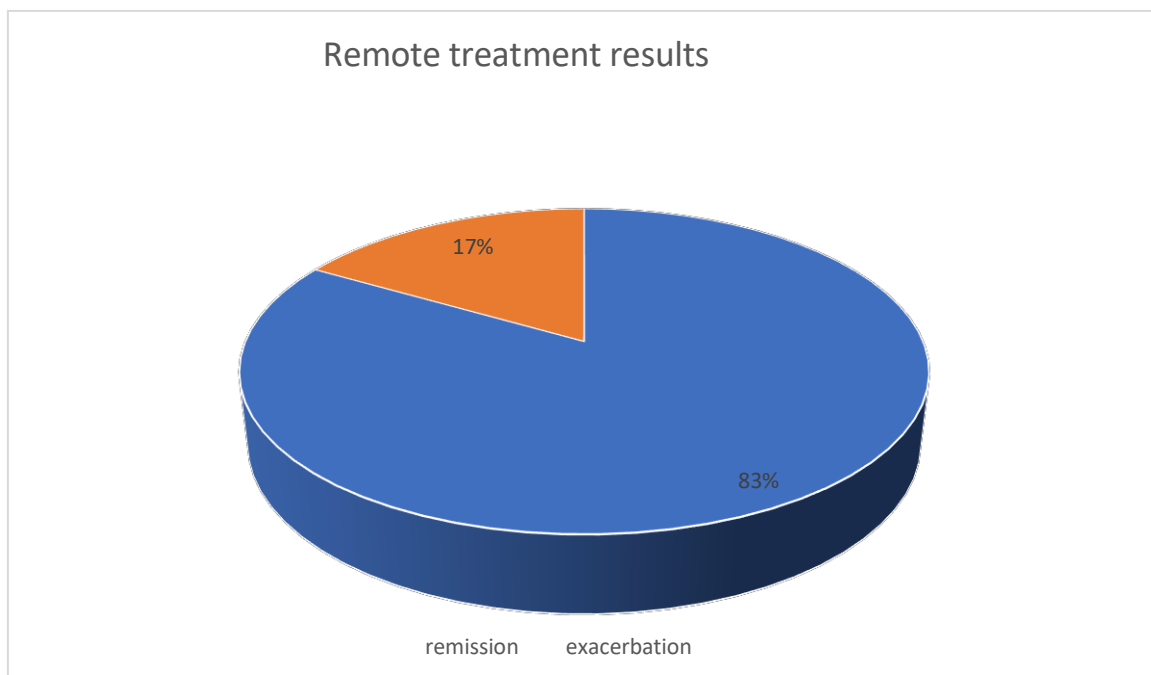
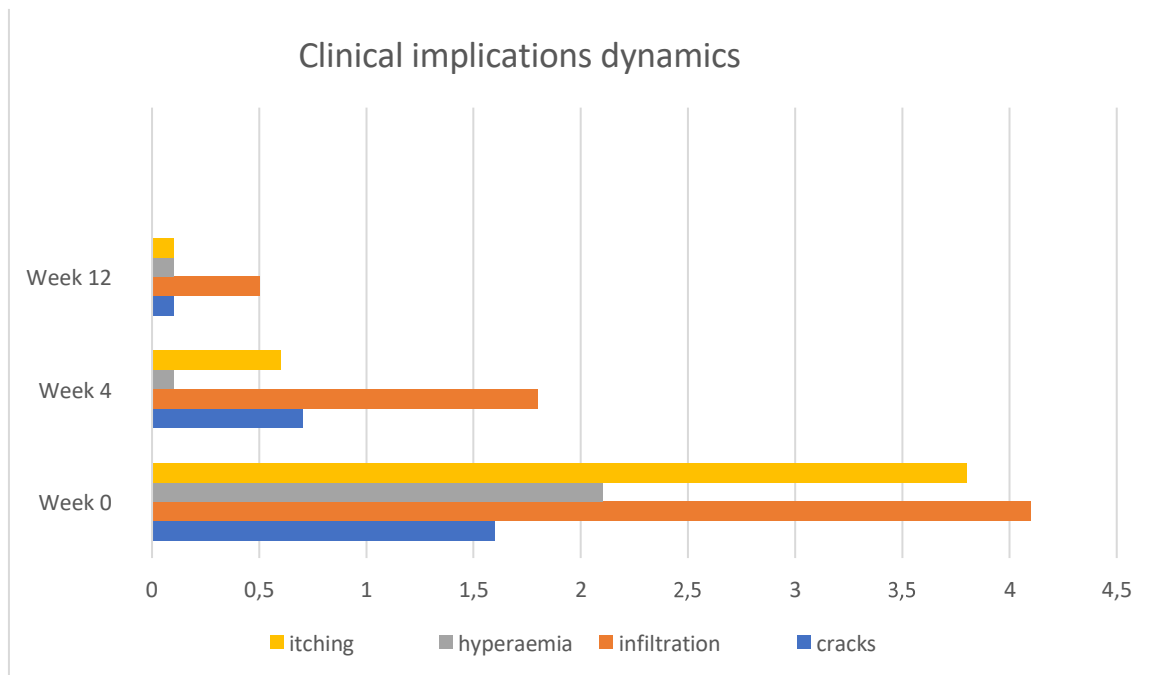
Significant improvement was noted among all the patients after four weeks of therapy, which demonstrated in a regress of exfoliation, erythema, infiltration, appearance index lowered from 3,8; 2,1 and 4,1 to 0,6; 0; 1,8 accordingly (pic.1). There has been noted significant epithelialization of palm skin. After 12 weeks of treatment, hyperaemia and exfoliation have regressed, infiltration did not exceed 0,5, there has been regenerative process noted on all the cracks. At this stage for 26 (86,6%) of the patients there has been noted a clinical remission, there were singular congestive plaques. 4 (13,4%) patients had minimal infiltration on smooth skin at singular plaques. Eruption regress had been noted on all patients scalps. Average PASI index in 12 weeks came down to 3,1. The surveillance of patients had shown regress of scalp eruption. The average PASI index after 12 weeks of treatment has gone to 3,1. With up to 12 months surveillance over the patients, there has been noted a solid remission process for 25 (83,3%) of patients, for 5 patients (16,7%) – exacerbation skin process (pic. 2).

During the process of Losterin medications usage, patients noted its high tolerability. There were no side effects noted while using cream and shower gel. Two patients with long hair noted an “unwashed hair” effect after the use of shampoo.

Our study has shown that Losterin medications are effective external use products in a complex therapy for psoriasis treatment. Possessing anti-inflammatory, regenerative, moisturizing effect, they also normalize local microcirculation, having a positive effect on all aspects of disease pathogenesis, leading to the clinical effect. Losterin cream and shower gel are recommended for use on lesion on smooth skin, Losterin shampoo – on scalp. Simultaneous use of cleansing product (shower gel) and cream leads to summarization effect of both products. Losterin medications may be used as the main external treatment medications. Besides, absolute safety allows to use the products for remission support for a long time without any precautions.

Thus, clinical remission has been achieved among 86,6% of patients with a help of complex therapy within 12 weeks. With up to 12 months surveillance over the patients, there has been noted a solid remission process for 83,3% patients. Losterin shower gel is recommended for use once a day for a psoriasis vulgaris of medium severity for a whole therapy course, Losterin shampoo is recommended for use once a day during the first two weeks, and every other day during the next four weeks, twice a day during the following six weeks. Losterin cream should be used after 2 weeks of application of external therapy with glucocorticosteroid medications, twice a day for the following ten weeks. After 12 weeks of active treatment, Losterin

medications are recommended for use at patients' own convenience for an extended period of time.



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