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EXTERNAL TREATMENT OF INFECTIOUS INFLAMMATORY SKIN DISEASES

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ABSTRACT

Pyoderma is the most common, frequently recurring infectious skin disease, sometimes requiring persistent long-term therapy, which determines the relevance of the problem and makes it necessary to further search for new approaches to treatment.

Keywords: Infectious factor, resistance, external therapy, fusidic acid.

INTRODUCTION

The widespread distribution of pathogens of opportunistic infections, the active participation of microbes in immune and non-immune mechanisms of skin inflammation, as well as the increased frequency of pathogens that are multiply resistant to etiotropic treatment, especially methicillin-resistant staphylococci, and irrational antibiotic therapy are causing increased attention from specialists to this problem and forcing clinicians to reconsider the current approaches to the diagnosis and treatment of inflammatory pathology of the skin and soft tissues.

MATERIALS AND METHODS

The infectious process develops during the interaction of a pathogenic microorganism and the immune system of the macroorganism and is accompanied by the proliferation of the microorganism, changes in the reactivity of the macroorganism, and tissue damage [1]. Susceptibility to most infections (except for particularly dangerous ones) is individual and is usually due to immune deficiency [2]. The infectious factor also plays a significant role in the pathogenesis of such common inflammatory diseases of the skin and soft tissues as acne, epidermodermatitis, and others. As numerous studies have shown, in patients with acne, a regular massive release of opportunistic microflora is noted from the elements of the rash, as well as the surface of unaffected skin, including Staphylococcus epidermidis and Propionibacterium acnes, which rapidly multiply in clogged sebaceous glands, separately or in association with other saprophytic bacteria.

RESULTS AND DISCUSSION

In addition, quantitative differences in these microbial populations have been recorded. Moreover, the more severe the pathological process, the greater the proportion of pathogenic staphylococci, in particular Staphylococcus aureus, in the microbiocenosis of the affected skin [1]. In the development of purulent-destructive skin infections, in addition to the resident saprophytic microflora, the transient pathogenic streptococcal-staphylococcal microflora also plays a leading role. It is known that, in addition to the leading pathogenetic role in the course of skin and soft tissue infections, pathogenic and opportunistic bacterial infections can complicate the course of such non-infectious dermatoses as allergic dermatoses, exudative psoriasis, lymphoproliferative diseases, mycoses, trophic ulcers, rosacea, etc. Violation of the

skin microbiocenosis is a factor that aggravates the development of the inflammatory process in the lesions [3]. Opportunistic pathogens can induce an infectious process in an organism with normal defense mechanisms only when the ratio of the infective dose per unit of protective factor, for example, per macrophage, exceeds a certain critical level. Infections caused by opportunistic pathogens occur in people with deficiencies in the immune system, when a small number of microorganisms that do not infect people with a normal immune status are sufficient [4].

The balance between the macro- and microorganism can be disturbed by both exogenous and endogenous factors (disruption of the neuroendocrine system, immunodeficiency, depletion of the body's adaptation mechanisms, concomitant somatic chronic pathology). As the experience of domestic and foreign specialists has shown, it is the failure of the body's immune response to the infectious factor that leads to the chronicization of the process [2]. The degree of pathogenicity of microorganisms, including staphylococci, is individual and determines the different activity of the body's immune response to them. It is associated with the ability to attach to sensitive cells (adhesion), multiply on their surface, penetrate these cells or underlying tissues, overcome non-specific and specific immune factors, and exert an immunosuppressive effect. In the case of acne, the active mutual influence of opportunistic and pathogenic microflora, as well as the immune system, is obvious. The accumulated information indicates the complexity of the structure of the microbial cell of staphylococci, their antigenic mosaicism, the diversity of extracellular biologically active substances, the significance of each of which, and especially the complex, is very important in understanding the mechanisms of bacterial sensitization of the body in relation to microorganisms that cause purulent-destructive skin diseases. In addition, one cannot ignore the leading role of the toxic factor in the pathogenesis of staphylococcal infection [3, 4].

Today, antibiotics are the drugs of choice for infections and infectious complications of skin and soft tissue diseases. They are often prescribed locally as monotherapy, as well as in combination with systemic antibiotics. The success of antibacterial therapy depends on the correct choice of drug, which is possible only if there is information on the sensitivity of the suspected pathogen. At the same time, in most cases, therapy is prescribed empirically, and therefore it is necessary to have local data on the epidemiology of antibiotic resistance. In recent years, there has been an increase in S. aureus resistance to antimicrobial drugs used in clinical practice. The main problem is the emergence of methicillin-resistant strains among the causative agents of not only hospital but also community-acquired infections [2].

But if for the systemic therapy of staphylococcal infections the arsenal of drugs that are highly effective against the pathogenic streptococcal-staphylococcal group of pathogens, especially S. aureus, is relatively wide, then the range of drugs available in forms for local use is limited. Moreover, resistance often develops to most of these drugs (tetracyclines, aminoglycosides, lincosamides). All of the above forces us to reconsider the attitude towards such a well-known antimicrobial drug from the fusidan group as fusidic acid (FA). The advantages of using fusidans in torpid chronic forms of skin and soft tissue infections, as well as secondary infected dermatoses, are the broad pharmacological profile of FC, the low level of resistance and the absence of cross-resistance with other antibiotics, as well as the possibility of step therapy and high penetrating ability, which allows us to recommend FC for wider use, especially in

infections caused by S. aureus and coryneform diphtheroids. It is known that the antibacterial effect of FC is based on the inhibition of the synthesis of bacterial proteins through interaction with the elongation factor involved in the process of translocation on the ribosome during the formation of a peptide bond. Work has appeared proving that FC has bacteriostatic, and in very high doses, bactericidal activity mainly against gram-positive bacteria; For staphylococci, for example, the minimum bactericidal concentration is 8-32 times higher than the minimum inhibitory concentration [13]. The spectrum of antibacterial activity of FC is unique, since within a single genus, different types of microorganisms may have different sensitivity to the drug. FC has the greatest activity against S. aureus, S. epidermidis, S. haemolyticus, P. acnes, including methicillin-resistant strains. In addition, FC is able to influence local immune reactions on the skin, inhibiting the release of interleukins and tumor necrosis factor.

In the material from closed inflamed follicles of the affected skin in patients with acne, moderate bacterial growth was detected and the microbial contamination of the studied material from the pustules ranged from 102 to 5 × 106 CFU/ml. The average quantitative indicators of microbial contamination of the inflammatory material from the affected skin ranged from 3.5 × 105 to 8.6 × 105 CFU/ml.

CONCLUSION

The experience gained suggests that prospects are currently opening up for expanding the use of FC in the clinical practice of a dermatologist. The drug "Fuziderm" 2% is effective in the treatment of staphylococcal infections of the skin and soft tissues, and can also be used as an antibacterial drug for a number of inflammatory skin diseases of non-staphylococcal genesis. "Fuziderm" is well tolerated by patients, the drug has a low level of resistance and allergic reactions.

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