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Modern Ideas of the Pathogenetic Mechanism of Allergodermatoses and New Possibilities of Complex Therapy

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Annotation: Diseases of the skin and subcutaneous tissue, including allergodermatoses, are widespread among the population of developed countries. The prevalence of contact dermatitis among frequently occurring skin nosologies reaches 53%, atopic dermatitis - 19%, eczema - 17% [1]. One of the most severe dermatoses is atopic dermatitis (AtD). The incidence of AtD in recent years tends to increase. In this regard, the problem of studying new data on the pathogenesis of the disease and searching for pathogenetically justified methods of therapy of allergic dermatoses remains relevant.

Keywords: allergodermatoses, atopic dermatitis, allergic contact dermatitis, external therapy, glucocorticosteroids, methylprednisolone aceponate.

Introduction. According to modern concepts, the fundamental pathogenetic mechanism of allergodermatoses is the presence of systemic allergic inflammation with active manifestation on the skin. Allergy is a pathological form of immune system response, which results in damage to the body's own cells and tissues. In the implementation of an allergic response in skin diseases, great importance is attached to reagin reactions and disorders in the cell-mediated link of immunity[8].

Allergic skin diseases (allergodermatoses) currently include atopic dermatitis (AtD), allergic contact dermatitis (AkD) and urticaria. Allergodermatoses are one of the most important problems of practical medicine. According to foreign authors, about 25% of patients who go to the doctor suffer from one or another allergic disease occurring with skin manifestations[9,15].

Allergodermatoses occur on average in 20% of patients with all allergic diseases [1]. These diseases are combined according to the principle of participation in their pathogenesis of allergic developmental mechanisms, the target organ of which is the skin. Despite the variety of etiological factors, mechanisms of development of these diseases, as well as huge clinical differences in localization, morphology of rashes, subjective complaints of the patient, the basis for the implementation of inflammation in the skin is a number of immunological changes. Approaches to the treatment of these diseases are determined by their etiological and pathogenetic mechanisms of development and consist in carrying out elimination measures, the use of both systemic and external pharmacotherapy[10,14]. Atopic dermatitis (AtD) is a chronic allergic skin disease with a genetic predisposition and complex developmental mechanisms that lead to impaired immune response, the development of allergic inflammation and the appearance of a certain symptom complex, which is characterized by age—related features of localization and morphology of foci of inflammation, as well as painful itching.

ATD is a socially significant problem due to its widespread occurrence, as well as its significant impact on the quality of life, disability, and disability [2,13]. Allergic contact dermatitis (AkD) is an inflammation of the skin in response to external exposure to substances capable of causing a specific allergic reaction; it belongs to the group of allergodermatoses [3]. In urticaria, external therapy is not used due to the ephemerality of the main morphological element of the disease, the blister, and is currently recognized as ineffective [4,11].

Despite the fact that allergodermatoses are polyethological and multifactorial diseases and their treatment requires an integrated approach, external therapy occupies the main place in the treatment of these diseases. Rational external therapy allows you to eliminate the inflammatory reaction and subjective sensations of itching, pain, burning; reduce violations of the epidermal barrier and protect the skin from adverse environmental factors, stimulate reparative processes in the skin, as well as control the attachment of secondary bacterial and fungal infections. Several groups of drugs are used for the external therapy of allergodermatoses: topical glucocorticosteroids (THC), topical calcineurin inhibitors (TIC) and emollients, but THC are the gold standard for the treatment of exacerbations of chronic allergodermatoses. Currently, they have no alternative in terms of the speed and severity of the anti-inflammatory effect. In addition, THC are the main means for the treatment of chronic allergodermatoses due to long-term (more than 50 years) the experience of their clinical application, which allowed us to accumulate convincing data on their effectiveness in both acute and chronic inflammation [5,12]. At the same time, the side effects of THC have also been well studied, which are an inevitable consequence of their anti-inflammatory and antiproliferative effects, leading to inhibition of fibroblast proliferation, collagen synthesis and mucopolysaccharides, as well as delayed mitosis of epidermis and dermis cells. The main local side effects include skin atrophy or hypotrophy, telangiectasia, hypertrichosis, steroid acne, rosacea, perioral, paraorbital, contact dermatitis, folliculitis, striae, attachment or intensification of an existing secondary infection, as well as skin pigmentation disorders. Systemic side effects are more common in children (under 2 years of age), whose skin permeability is higher than in adults. At the same time, it is possible to suppress the function of the adrenal cortex (Cushing's syndrome); the development of hypertension; electrolyte imbalance; diabetes mellitus; aldosteronism; osteoporosis; stunting in infants and young children. It is obvious that the probability of side effects increases with the duration of their use, as well as irrational approaches to their appointment [6, 7]. Unfortunately, there is currently no single "ideal" TGCS that would have an optimal ratio of efficiency and safety. At the same time, there are a number of drugs that meet modern requirements for THC, i.e. They have high clinical efficacy, proven safety when using the recommended doses and duration of use, and are also convenient to use.

Purpose of the study: to investigate dynamic changes in the parameters of patients with allergodermatoses

Materials and methods of research: During 2021-2023 at the Republican Allergy Centre we conducted retrospective studies among patients with allergodermatoses who had concomitant diseases such as diabetes mellitus, chronic diseases of gastrointestinal tract and ENT organs. Third-trimester pregnant patients with allergodermatoses were also included in the studies.

In the examination of 175 patients, 142 women and 33 men, comparative analyses were made by sex, age category, and etiological factor of allergodermatoses.

Results of the study. Previously, we conducted a retrospective analysis of 3822 case histories of patients who received outpatient and inpatient treatment at the Republican Scientific and Specialised Allergy Centre in the period from 2020 to 2023. The study of changes in the distribution of allergic patients by sex revealed that in 2021, out of 1547 patients, 54.4% were women and 45.6% of patients were men. In 2022, out of 1816 patients, 58.8% of patients were women and 41.2% of patients were men. In 2023, of the 459 case histories analysed, it was noted that women accounted for 61% of patients and men 39% (Table 1.).

Examination of the changes in the age composition of patients by year showed that in 2021, patients aged 60 years and above had the lowest rate of 7.71% and those under 30 years of age had the lowest

rate of 11.56%. Patients in the age category of 41-50 years were 27.85% and the highest rate was in the age group of 51-60 years with 37.15% of the total number of patients with allergic diseases (Table 1.).

In 2022, changes in the age composition of patients with allergic diseases were characterised by an increase in the rates of patients under 30 years of age to 27.85%; in the age of 31-40 years to 28.25%; and, in part, in the rates of patients 60 years and older to 9.66%. At the same time, there was a decrease in the rates of patients aged 41-50 years to 20.15% and those aged 51-60 years to 14.11% (Table 1).

In 2023, among patients with allergic diseases, patients aged 31-40 years had the highest specific weights, 24.3%; patients aged 30 years, 22.95%; and patients aged 41-50 years, 22.2%. The proportion of patients aged 51-60 years and over 60 years was significantly low - 18.6% and 11.9%, respectively (The study of the dynamics of changes in the specific weight of nosological forms of allergic diseases for the period from 2021 to 2023 revealed the following. Of all nosological forms of allergic diseases, the highest specific weight by years was bronchial asthma - 58.5%, 49.0% and 48.3%; food allergy - 17.3%, 23.17% and 14.6%; drug allergy - 9.3%, 14.2% and 9.8%. Allergic diseases acute urticaria + Quincke's oedema had a relatively low specific weight - 5.23%; 5.4% and 3.7% (respectively by year). The share of other allergic diseases was not significant. In the dynamics of the study from 2021 to 2023, no regular changes in the specific weight of nosological forms of the main allergic diseases were found, but only a slight increase in the specific weight of acute giant urticaria, which was 0.96% in 2021, 1.1% in 2023 and 4.35% in 2023.

So, the retrospective analysis of medical records of patients with allergic diseases allowed us to establish that the dynamics of changes in the sex composition of patients with allergic diseases for the period from 2021 to 2023 is characterised by a stable trend of growth in the proportion of female patients and a decrease in the proportion of male patients.

The dynamics of changes in the age structure of patients with allergic diseases is characterised by a significant increase in the specific weight of patients under 30 years of age and at the age of 31-40 years, at the same time there is a significant decrease in the specific weight of patients at the age of 41-50 years and 51-60 years. This indicates that the age structure of patients with allergic diseases is undergoing a significant ‘rejuvenation’. In our Republic, of all nosological forms of allergic diseases, bronchial asthma, food allergy and drug allergy have the greatest specific weight, the indicators of which did not undergo any regular changes for the period from 2021 to 2023.

Conclusions: Carrying out regular retrospective analysis in the Republican Allergological Centre will make it possible to assess an objective picture of the development of allergological diseases and sex. The results of retrospective data can be a criterion for diagnosis, differential diagnosis, prevention and treatment of allergodermatoses. The retrospective results obtained indicate the need for further studies to identify priority allergic risk factors for planning and organisation of specialised medical care among the population.

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