

**PREVENTIVE MEASURES FOR URTICARIA, EARLY DIAGNOSIS  
AND IDENTIFICATION OF RISK FACTORS**

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**Abstract:** Urticaria is a group of diseases characterized by the development of itchy wheals and/or angioedema [1]. In approximately 40% of cases, urticaria is accompanied by angioedema. The prevalence of acute urticaria ranges from 1 to 5% in the population, and among the pediatric population, the incidence of acute urticaria reaches 6.7%. According to recent estimates, 10 to 20% of the population will experience an episode of acute urticaria during their lifetime. About 50% of children with acute urticaria have concomitant allergic diseases [2]. According to S. Comert et al., the most common triggers of acute urticaria are drugs (38.1%), infections (35.2%), stress (24.7%) and food (17.8%) [5,7]. In another study, medications were also the most common cause of acute urticaria at 20.7%, followed by insect bites (10.2%) and food (7.4%) [3].

**Key words:** urticaria, diagnostics, treatment, efficacy, safety, acute allergic-pseudoallergic reactions, provoking factors, food allergy, drug allergy, urticaria, angioedema.

**Relevance:** Chronic urticaria (CU) is one of the current medical and social problems due to its wide prevalence, intensive growth of morbidity, frequent resistance to traditional methods of therapy, negative impact on quality of life, financial burden on the healthcare system and patients. The prevalence of chronic cystitis in the population ranges from 0.1 to 1.5%, with people of working age suffering predominantly [4,6]. The long and persistent course of the disease, severe itching, and cosmetic problems lead to loss of ability to work and a decrease in the quality of life of patients with chronic cystitis. In the last decade, attempts have been made to develop a unified approach to the diagnosis and management of chronic kidney disease based on the principles of evidence-based medicine. The tools of everyday clinical practice are international and domestic consensus documents that briefly reflect modern ideas about various aspects of chronic kidney disease [3,5]. Chronic urticaria (CU) is a polyetiological disease with different pathogenesis variants and typical clinical manifestations - skin rashes in the form of blisters (urticaria), which quickly merge and spread throughout the body. HC is a very difficult problem both in terms of diagnostic search and in choosing effective and adequate therapy. The situation is usually aggravated by the fact that children with

chronic urticaria are admitted to a specialized hospital quite late (4-12 weeks from the moment the rash appears), which seriously complicates the management of such patients and worsens the prognosis of the disease. Often, despite all efforts, doctors fail to find the causes of this pathology in a particular patient. In such cases, we are dealing with the so-called idiopathic variant of CU. [5,6]. For several decades, a number of international organizations have been working to solve the problems that doctors face when treating patients with chronic urticaria. This is evidenced by European guidelines for the diagnosis and treatment of urticaria [5,9,12,18]. Urticaria is an etiologically heterogeneous group of diseases and conditions united by the main symptom and primary skin element - a blister, which occurs as a result of edema of the papillary layer of the dermis. The wheal reaction and itching are caused by the release of biogenic amines at the site. The key mediator is histamine. Also released are preformed cytokines, including TNF- $\alpha$ , IL-3, IL-4, IL-5, IL-6, IL-8, IL-13, and granulocyte-macrophage colony-stimulating factor (GM-CSF). More recently synthesized mediators of arachidonic acid include PGD<sub>2</sub> and the leukotrienes C<sub>4</sub>, D<sub>4</sub>, and E<sub>4</sub>. Leukotriene C<sub>4</sub> is 1000 times more potent than histamine and thus can be considered as an additional mediator of urticaria [5,7,8,11]. Leukotrienes are the most important proinflammatory cytokines synthesized by mast cells, eosinophils, and neutrophils upon their activation, are powerful inflammatory mediators, bind to cysteinyl leukotriene receptors, and as a result of the interaction, a violation of the permeability of the vascular wall occurs [5,8,11]. There are many classifications of urticaria, which take into account both the clinical manifestations of the disease and its etiology, but in recent years, a consensus of leading European experts has proposed classifying urticaria depending on its duration and the factors that provoke the appearance of the rash. It is necessary to take into account the presence of a wide range of clinical manifestations of various types of urticaria, as well as the possibility of the presence of two or more subtypes of urticaria in one patient. According to the course, acute (up to 6 weeks) or chronic (more than 6 weeks) urticaria is distinguished [5,7,9]. Urticaria is a common pathology. A number of studies classify urticaria as a group of hereditary diseases, and this is not without reason. Most researchers agree on defects in the complement system. However, each form of urticaria has its own characteristic features of the course. [5,10,11,12]. Despite the fact that urticaria is an etiologically heterogeneous disease or syndrome, the primary element of all variants of the disease is a wheal. The wheal always has a typical characteristic: local swelling of the papillary layer of the dermis, skin itching or burning accompanying the swelling, short duration (usually up to 24 hours). The main pathophysiological mechanism of blister formation is the activation of mast cells with the release of mediators of allergic inflammation (histamine, prostaglandins, kinins), leading to increased vascular permeability, vasodilation and acceleration of blood flow [5,7,10]. There is no single classification of urticaria recognized worldwide to date. Urticaria

can be both an independent disease (primary) and a symptom of some disease (secondary). Urticaria is classified by duration of the course, by types and subtypes. One patient can have two or more different forms of urticaria [5,11,12].

**Objective of the study:** To determine risk groups for urticaria, early diagnosis, analyze the etiological factors of the formation of allergic urticaria, and determine the influence of provoking factors on the clinical picture.

**Materials and methods of the study:** Patients for the study were recruited from an outpatient clinic. The study was carried out by parallel, independent recruitment of the main group and the comparison group. The main group consisted of 92 patients at risk for allergic urticaria: those suffering from allergies, those suffering from chronic diseases, those suffering from acute and chronic infections, which are the most important risk factors for the development of urticaria. The comparison group: 68 patients - priority groups for the prevention of urticaria. Participants in both study groups underwent a series of laboratory tests to establish reference values for a healthy population. The sample did not include individuals over 35 years of age. Initially, all patients went through the process of diagnosis: the diagnosis was determined by collecting complaints, anamnesis, examining the patient, the factors that directly provoked the disease were carefully studied and analyzed. Complete information about the diet was collected, a general clinical examination was conducted and laboratory tests were prescribed - a blood test with an assessment of the leukocyte formula and eosinophilia, liver parameters. Other tests were also performed (as indicated). Laboratory tests are sometimes necessary to identify the cause of urticaria. In most cases, the diagnosis is based on the patient's medical history and physical examination.

**Results:** It was found that the highest frequency of allergic urticaria manifestations was observed in the age group from 7 to 10 years, which amounted to 22%. In the age group from 4 to 6 years, the frequency of occurrence of urticaria manifestations was 18%. The highest frequency of occurrence was observed in the age group of children from 10 to 14 years (60%). Food allergy was detected in 76% of the subjects. Laboratory studies showed that 37% of the subjects had an ESR level above 20 mm/hour, eosinophils were greater than 20%, leukocytes were normal or above  $10 \times 10^9$ /liter, 29% of the subjects had protein, and 19% had bacteria. A high percentage (4 times more) of infants is noted in the group with food OAR/PAR, on the contrary, there are 2.2 times more patients over 12 years old in the group with RLH. Thus, young children are more susceptible to food-induced AAR/PAR, and adolescents to RLH. In the comparison group, the average age of patients was 24.2 [3-35.4] years. age, gender, heredity, genetic factors, early development of urticaria in relatives, eating habits. The presence of even one of the risk factors increases the risk of developing urticaria by 3.5 times, and the combined effect of several factors by 5-7 times. A full analysis of the information was conducted taking into account

age characteristics and gender. Thus, the groups were comparable with each other by gender and age. The results of the studies showed that the most significant or large risk factors are various diseases: viral and bacterial infections, parasitic lesions, the presence of chronic inflammation. The combination of the above factors increases the likelihood of developing urticaria by 3-10 times. Gender differences among patients with AAR/PAR were demonstrated by the leadership of boys (by 14 and 20% more in groups 1 and 2, respectively). Urticaria may be accompanied by Quincke's edema (angioedema, old name - angioedema). Angioedema is an edema involving deep layers of the skin in the pathological process. According to statistics, in 50% of cases urticaria occurs in isolation, 40% of patients with urticaria develop Quincke's edema, and 10% of patients develop angioedema without urticaria. Some patients are sincerely mistaken, believing that Quincke's edema is only swelling of the face or throat. Angioedema does often occur in the face, but this does not mean that it cannot appear on the hands, feet, and other parts of the body.

**Conclusions:** Urticaria is one of the most common skin diseases, characterized by the appearance of a skin rash, the primary element of which is a blister. According to epidemiological studies, urticaria is observed at least once in a lifetime in 15-25% of the population, and it becomes chronic in 25% of cases. Urticaria can be both an independent disease and a symptom of a number of diseases [7,14,15]. In patients with urticaria, it is necessary to try to establish the etiological factor of the disease. For this purpose, it is recommended to check: substances entering the digestive system (food products, medications, etc.), inhalants (dust, feathers, etc.), injectants, infections (bacterial, viral, fungal, parasitic), internal diseases: chronic infections, thyroid diseases [2,7,10,16,18]. The main areas of prevention of urticaria are: elimination of the cause. Elimination of factors that provoke the rash. Use of medications that either prevent the release of inflammatory mediators from mast cells or block the effect of these mediators. The basis of treatment of urticaria is general measures to prevent or eliminate triggers and pharmacotherapy. Therapy can be divided into first-, second- and third-line therapy [8,9,14,17]. The conducted study focused our attention on some features of the clinical picture and course of AAR/PAR, which may provide practical guidelines in differential diagnostics and tactics for further patient management. In the clinical picture, angioedemas are common, especially swelling of the lips and tongue (due to different "techniques" of eating and taking medications). The prevalence of chronic urticaria is from 0.1 to 0.5% in the population. On average, the disease lasts 3-5 years. 50% of those who have had the disease may experience a relapse even after a long remission. Women suffer from urticaria more often than men, children - more often than adults. It is an adult that is predominantly chronic form of the disease. There is no single generally accepted classification of urticaria. It is proposed to distinguish the main groups of conditions accompanied by the appearance of blisters, united by similar pathogenetic

mechanisms: common urticaria, physical urticaria, contact urticaria, hereditary urticaria or hereditary angioedema, psychogenic urticaria [5,13,17]. The prevalence of acute urticaria is 20% [10], among the child population - 2.1-6.7% [11], and acute urticaria in children is more common than in adults. Chronic spontaneous urticaria (CSU) affects up to 0.5-5% of the population, women are more often affected than men [12,17, 18]. Primary health care includes measures for the prevention, diagnosis, treatment of urticaria and associated diseases, medical rehabilitation, and the formation of a healthy lifestyle. Primary medical and sanitary care is provided by general practitioners, district general practitioners, pediatricians, district pediatricians and general practitioners. Prevention is aimed at maintaining long-term remission and preventing exacerbations, and includes elimination measures: eliminating or limiting the effects of physical or other triggers of urticaria, monitoring the activity of the disease.

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