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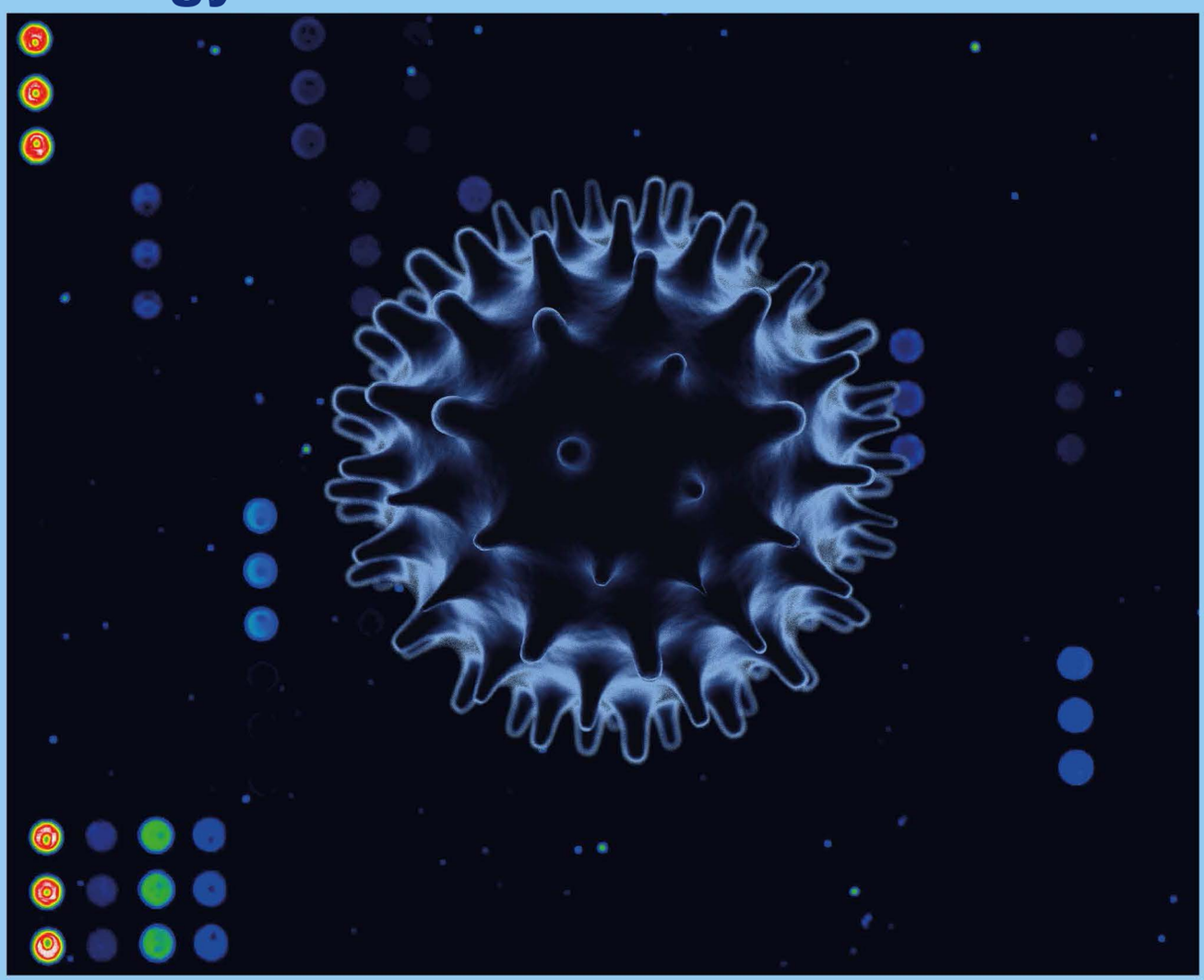

РААКИ
РОССИЙСКАЯ АССОЦИАЦИЯ АЛЛЕРГОЛОГОВ
И КЛИНИЧЕСКИХ ИММУНОЛОГОВ

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Abstracts

ABSTRACTS

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ALLERGIC DISEASES IN PREGNANT WOMEN WITH BRONCHIAL ASTHMA

Abuldinova OA, Prikhodko OB, Romantsova EB, Kostrova IV, Luchnikova TA, Anokhina VS

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The aim of the study was to study extrapulmonary manifestations of Allergy in patients with BA, depending on its clinical course, severity, and level of control.

Clinical and functional features of the course of BA in 300 patients in the dynamics of pregnancy were studied. 190 (63.3%) patients had mild BA (group I), 86 (28.7%) had moderate BA (group II), and 24 (8.0%) had severe BA (group III). 181 (63.7%) patients were diagnosed with an allergic form of BA, 30 (10.0%) – non – allergic, 79 (26.3%) - mixed. Exacerbation of BA during pregnancy was detected in 223 patients (74.3 %). In group I – in 129 (67.9 %) patients, in group II – in 70 (81.4%), in group III – in 24 (100%).

Hereditary burden of allergic diseases was traced in 123 (41.0%) patients, with AD – in 108 (36.0%), of them on the maternal side – in 65 (60.2%). In 17 patients, BA was observed in three generations, including 14 (82.3%) on the mother's side and 3 (17.6%) on the father's side. The structure of allergic diseases in pregnant women with BA was determined depending on the severity of the disease. Thus, extrapulmonary diseases of the atopic circle were observed in 132 (69.5%) patients of group I, in 69 (80.2.1%) – group II, in 21 (87.5%) – group III. At the same time, allergic rhinitis was observed in 155 patients (51.7%), pollinosis – in 130 (43.3%), urticaria – in 61 (20.3%) and atopic dermatitis - in 30 (10%). Allergic rhinitis, pollinosis and urticaria were the most frequent extrapulmonary manifestations of Allergy in BA patients, observed in 221 (73.7%) patients, while 152 (68.8%) of them had a combined Allergy. The presence of atopic BA and allergic rhinitis (AR) was noted in 155 (51.7%) patients, and in 65 (41.9%) of them, AR preceded BA, and in 90 (58.7%) it manifested simultaneously with the BA debut. AR was significantly more common in group III patients than in group II and I ($p<0.001$). The increase in the frequency of respiratory allergies, which occurs in proportion to the aggravation of the BA course, confirms the concept of the unity of allergic inflammation in the upper and lower Airways.

The presence of extrapulmonary allergic diseases is a factor that aggravates the course of BA in the gestational period, a predictor of uncontrolled course, which dictates the need for constant monitoring of this category of patients and preventive measures, with mandatory correction of the volume of therapy in the dynamics of pregnancy.

EXPERIENCE USING DIAGNOSTIC COMPONENT IF YOU ARE ALLERGIC TO WHEAT

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A large number of wheat components (W) are characterized as allergens-albumins, globulins, gliadins and glutenins. Depending on the mechanism of action, there are food allergies, wheat-dependent anaphylaxis induced by physical activity, occupational asthma, rhinitis, and contact urticaria. Particularly significant and often associated with asymptomatic sensitization is allergy to W in children. Data on the frequency of food allergies, the presence of cross-reactions with food allergens, grass and tree pollen are presented in single studies.

THE AIM of the study was to study the prevalence of hypersensitivity to W in allergic diseases associated with food sensitization.

MATERIALS AND METHODS. Patients with food allergies were examined (adults n=80; children n=218). Diagnostics of hypersensitivity to W included determination of asIgE to extract (E, F4), allergocomponents (AC) omega 5 gluten (O5G) rTri a19 (F 416), gliadin (F 233). AsIgE was also determined for food allergens (E and AC).The testing panel was differentiated-for children of early-preschool age (3-6 years), school age and adults. Differentially included: milk, egg, apple, casein, carrot, soy, potato, rice, peach, oats, banana, Mal d 1, Gly m 4, Dau c 1, Pru ar 1. rBet v1, for trees and grasses-rBet v 1, rBet v 2 rBet v 4, rPhl p1 p5b, rPhl p12. “Immunocap Phadia” and ELISA”Alcor-Bio”were used to determine asIgE. The results were expressed in kUA/l, with gradation by class (from 1 to 6).

RESULTS. An increased level of asIgE to EW was detected in 16.2%. Grade 1 levels (62.5%) prevailed. For EW, a correlation of average strength with allergic anamnesis was revealed (r = r = 0.51; $p < 0.05$). An increased level of asIgE to O5G was found in 20.1%. Levels 2 (50.5%) and 3 classes (33.3%) prevailed. For AK O5G, a high correlation was recorded with allergic anamnesis data (r = 0.72; $p < 0.05$). An increased level of asIgE to AC gliadin was found in 10.6%. Levels 2 (45.0%) and 3 classes (30.0%) prevailed. An increased level of asIgE to the combinations - O5G + gliadin was recorded in 47.0%, EW + O5G in 20.1%, EW + gliadin in 11.4%. The isolated level of as IgE to EW was recorded in 5.4%, to O5G in 6.7%, and to gliadin in 2.7%. In children of early preschool age, an increased level of asIgE was combined with sensitization to cow’s milk (67.6%), egg (45.9%), Mal d 1 apple (40.7%). In schoolchildren and adults with rPhl p1, rPhl p 5b (69.0%), rPhl 12 (24.3%).

CONCLUSIONS. Determination of asIgE to EW and AC - O5G and gliadin is optimal for the diagnosis of W sensitization. Do not stop the diagnostic search in case of negative asIgE results for EW. Ig E dependent reactions to ACW in older children and adults are often combined with increased sensitivity to the allergic components of timothy: PR 10, rPhl p1, rPhl p 5b and profilin - rPhl 12, which is determined by cross-reactivity.

APPLICATION OF PATCH-TESTS FOR FOOD ALLERGIES WITH SQUEEZING CONCENTRATE OF FRUIT AND VEGETABLE JUICES

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Relevance and purpose of the study: All over the world, among household factors, plays an important role in the development of allergic dermatoses of food etiology. This disease develops when eating certain foods that contain an allergen that causes an aggressive immune response. According to the WHO, about 25% of the world's inhabitants suffer from food allergies, and in most cases, it is food protein that becomes the cause of the development of an allergic reaction. Allergy to foods of animal origin more often occurs in children under 6 years old, and allergy to foods of plant origin more often occurs in children over 6 years of age and in adulthood.

THE AIM of the study was to diagnose a late allergic reaction with the aim of manifesting food sensitization using PATCh tests for squeezing fruit and vegetable concentrates (Yusupovskie tomatoes, Raisin grapes).

MATERIALS AND METHODS: In September 650 patients turned to the Republican Scientific Specialized Allergy Center, of which 215 patients with food allergies. The diagnosis of the main and concomitant diseases was made on the basis of the generally accepted complex clinical and allergological examination of patients: a thorough collection of allergological analysis, clinical and laboratory studies, setting of allergological diagnostic tests PATCh (application). For specific diagnostics, squeeze of fruit and vegetable concentrate was used (tomatoes of the Yusupovsky variety, grapes of the Raisin variety). The patients' age is 18-45 years. A dubious reaction came out in 15% of patients to Yusupovskiye tomatoes and 24.5% of patients to Izyum grapes. A weak positive reaction came out in 48% of patients for Yusupovskiy tomatoes and 57% of patients for Izyum grapes. A strong positive reaction came out in 32.5% of patients for Yusupovskiy tomatoes and 16% of patients for Raisin grapes. An extremely positive reaction came out in 33% of patients for Yusupovskiy tomatoes and 3% of patients for Izyum grapes.

CONCLUSION: Thus, it is possible to use PATCh tests with squeezing fruit and vegetable juices. Application tests do not injure the skin, which allows us to carry out this diagnosis for children. The use of pomace of fruit and vegetable juices has reduced the cost of diagnosing.

SENSITIZATION PROFILE OF CHILDREN LIVING IN MAGNITOGORSK CITY AND SURROUNDING AREAS

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House dust allergy is a common cause of allergic diseases such as bronchial asthma and allergic rhinitis. Symptoms caused by environmental sensitization are all-season and often related with plants pollen activity or pets. The aim of the study was to study children respiratory sensitization in Magnitogorsk city and surrounding areas.

The study included 55 children with established environmental sensitization and diagnosed atopic diseases (bronchial asthma/allergic rhinitis/atopic dermatitis from 1 to 18 years-old (average age – 7 years), 35 boys (64%) and 20 girls (36%). All patients were divided into three groups depending on their residence: 1st group included 22 children (from Magnitogorsk city), 2nd group – 8 children (Verkhneuralsk city, Chelyabinsk region), 3rd group – 25 children (Beloretsk city, Bashkiria region). All children were examined by the ImmunoCAP method for house dust mites (HDM), set of tree and grass pollen allergens, and a cat. The degree of sensitization of specific IgE (sIg E) was determined depending on the titer from class (cl.) 0 (titer <0.35 kU/l) to 6 cl. (>100 kU/l).

Environmental sensitization to Dermatophagoides pteronissinus (D.p.)/Dermatophagoides farinae (D.f.) was detected in 100% of cases (55 children). The average sIg E values HDM is: 3 cl.: D.p. 10.86±5.02 kU/l; D.f. 7.05±3.92 kU/l (Magnitogorsk); D.p. 9.25±5.93 kU/l; D.f. 6.47±3.49 kU/l (Verkhneuralsk). Higher levels of sIg E to environmental aeroallergens are observed in Beloretsk- 4 cl.: D.p. 17.58±5.04 kU/l; D.f. 19.19±6.57 kU/l. Although reliable data have not yet been obtained, meanwhile, the values of sIg E to HDM in children living in Bashkiria are more significant. We established sensitization to birch (20.95±7.21 kU/l), timothy grass (7.71±4.29 kU/l) and wormwood (15.27±7.16 kU/l) for patients from Magnitogorsk. In the cities of Verkhneuralsk and Beloretsk, the indicators were similar to ones in Magnitogorsk. Among epidermal allergens, sensitivity to cat dander was higher in Magnitogorsk: 4 cl. (42.61±9.8 kU/l), that significantly exceeded the average values for patients from Verkhneuralsk (4.09±2.48 kU/l) and Beloretsk 19.17±6.3 kU/l) ($p<0.05$). Thus, only one third of patients with environmental sensitization to HDM living in Magnitogorsk and nearby territories did not show sensitivity to other respiratory allergens.

MEDICINES OF MONOCLONAL ANTIBODIES FOR ALLERGIC DISEASES (SAFETY ISSUES)

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Currently, monoclonal antibody medicines (MABs) are the second largest pharmaceutical product on the world market after vaccines. The clinical effectiveness of the use of MABs is due to the high selectivity and specificity of their action on certain links in the pathogenesis of the disease. In the treatment of allergic diseases, MABs specific to IgE, IL-5R (the alpha subunit of the IL-5 receptor), and IL4R-alpha subunit (common to the IL-4 and IL-13 receptor complexes) are successfully used. By binding circulating IgE or type 2 inflammatory cytokine receptors (IL-5, IL-4, IL-13), MAB prevent the interaction of IgE with high-affinity Fc RI- receptors expressed on the basophil membrane, or interrupt the cascade of allergic reactions and the development of eosinophilic inflammation. The use of MABs in some cases is accompanied by the development of serious adverse reactions, which can manifest itself in the form of infusion, allergic reactions or a decrease or loss of the effectiveness of the therapy. Mechanisms underlying adverse reactions, as well as the reasons for their development are diverse; require special attention reactions caused by the activation of the mechanisms leading to increased biological effect that cannot be sufficiently controlled by a physiological mechanism due to feedback. Significant safety problems with the use of MABs are associated with the manifestation of "undesirable" immunogenicity, since they are of a protein nature and require long-term administration. All risk factors for the development of an immune response should be identified and confirmed at the stages of preclinical and clinical studies and taken into account at the post-registration stage of follow-up in the pharmacovigilance plan. Preclinical studies of immunogenicity are not informative in terms of prognostic significance for the clinic. Only the experience of clinical use of MABs and the assessment of their immunogenicity allow us to establish the immunogenic potential of the drug and the correlation between the severity of clinical manifestations and the intensity and direction of the immune response. When evaluating the immunogenicity of drugs at the stage of clinical development, it is optimal to simultaneously determine the level of ADA, evaluate the parameters of pharmacokinetics and pharmacodynamics, the effectiveness and safety profile during repeated courses of treatment. Safety issues of the use of MABs are extremely relevant.

FLOW CYTOMETRY IN THE DIAGNOSIS OF AUTOIMMUNE URTICARIA

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BACKGROUND. Autoimmune urticaria (AIU) is a subtype of chronic spontaneous urticaria (CSU) with severe course and antihistamine resistance.

OBJECTIVES. To assess the utility of indirect basophil activation test (BAT) in AIU diagnosis and prognosis of omalizumab effectiveness.

MATERIALS AND METHODS. The prospective study included 51 patients with CSU 19-71 years old (M±SD–45±2yrs), 40 females and 11 males. CSU diagnosis was performed according to EAACI/GA^{2}LEN/EDF/WAO/RAACI 2018. Were considered CSU duration, disease activity (UAS7), therapeutic control (UCT), life quality (DLQI), total IgE level (Polignost, Russia). Indirect BAT was performed by flow cytometry (Allerginicity kit, Beckman-Coulter, USA) assessing the percentage of CD203c basophil activation marker expression. Stimulation index (SI) was counted as ratio of activated donor basophils incubated with patient's serum to activated basophils incubated with negative control serum. The BAT was considered positive if SI≥2.

RESULTS. Angioedema accompanied wheals in 28 (55%) CSU patients. Mean disease duration - 3.7±0.7 years. Urticaria activity - 23±2 UAS7 score. Total IgE level - 66±22 IU/mL.

According to BAT results the CSU patients were divided in 2 groups: BAT-positive – 19 (37%) and BAT-negative – 32 (63%) patients. In BAT(+) percentage of activated basophils was significantly higher than in BAT(-): 29.81±6.78% vs 2.61±0.58% (p=0.0008); SI – 14.92±4.20 vs 0.79±0.09 (p=0.004). Disease course in BAT(+) patients was more severe. In BAT(+) group angioedema occurred more often - 68% vs 47% (p=0.06), disease activity by UAS7 score was 27±3 vs 19±2 (p=0.04). In both groups the disease course was uncontrolled (< 12 UCT score). According to DLQI in BAT(+) patients CSU caused high life quality impairment (11±3 score), in BAT(-) – moderate - 7±2 (p=0.28). Total IgE level was significantly higher in BAT(-) patients - 92.68±31.80 vs 13.36±3.37 (p=0.02).

According to the third line of CSU treatment 10 patients started omalizumab, 6 of which were BAT(+) and 4 were BAT(-). All BAT(-) patients showed fast response, wheals and itching disappeared during initial 4 weeks of treatment. BAT(+) patients had delayed response. In 3 patients partial response was observed after 15 weeks, in another 3 patients – after 20 weeks of treatment.

CONCLUSION. High CD203c marker expression was in 37% of CSU patients. BAT is a promising tool for AIU diagnosis by flow cytometry and can predict effectiveness of omalizumab in CSU patients

EXPERIENCE OF USING OMALIZUMAB IN CHILDREN WITH SEVERE BRONCHIAL ASTHMA

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The purpose of the investigation is to study the Omalizumab therapy effectiveness in children with severe BA.

PATIENTS AND METHODS. Therapy with Omalizumab (Xolar®, Novartis Pharma) according to indications was prescribed to 8 patients aged 6-13 years, uncontrolled on high doses of inhaled corticosteroids in combination with bronchodilators with an initial IgE concentration of up to 1500 IU/ml. The examination of children included a medical examination, determination of respiratory function, determination of total IgE, assessment of control using the AST questionnaire (Asthma Control Test).

RESULTS. The AST level in all children was less than 19 points. Doses and intervals of administration of Omalizumab were selected according to the instructions. At the onset the age of the patients ranged 6-13 years, the level of total IgE was 605.25±101.73 IU/ml. Daytime symptoms were noted 3-4 times a week up to 2 times a day, all children had nighttime symptoms. The exacerbations frequency was noted 2-3 times a year. According to spirography data, FVC and FEV1 indicators remained at the lower border of normal values (83.3±3.4% and 82.0±7.4%), FEV1/VC and the bronchodilator action index were reduced (65.5±4.7% and 28.0±6.5%).

At the time of assessment two children have been receiving Omalizumab for 5 months, the rest 23-54 months. The earliest criterion for the therapy effectiveness (after 2-4 months) in all children was a decrease in the symptoms frequency - daytime up to 1-2 times a week, nighttime up to 1-2 times a month. Exacerbations during treatment were recorded 1-2 times a year and were stopped on an outpatient basis; only one child who received therapy for 5 months required hospitalization. A decrease in the level of total IgE was recorded after 12-24 months of treatment (315.60±109.52 IU/ml, t-test 1.94). An improvement in lung function was noted with longer therapy. So, in 2 patients who received Omalizumab for only 5 months, have no improvement in functional parameters. The rest of the children showed an increase in FVC (98.7±3.4%, $p<0.001$), FEV1/VC (77.2±3.3%, $p<0.05$). The bronchodilator index decreased more than 2 times (12.0±1.9%).

The control level in 6 children reached 21-22 points, in 2 patients with the therapy less than 6 months did not reach 20 points.

CONCLUSION. Severe bronchial asthma (BA) in children is the most difficult phenotype to treat. Long-term combination therapy with Omalizumab is effective in achieving control over severe asthma.

MOLECULAR DIAGNOSTICS AS A TOOL FOR STUDYING THE STRUCTURE OF SENSITIZATION IN PATIENTS WITH BRONCHIAL ASTHMA AND ALLERGIC RHINITIS LIVING IN THE SOUTH OF RUSSIA

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The patients, who have asthma (As) accompanied with allergic rhinitis (AR), oftener suffer from As exacerbations and more frequently have to go to polyclinics and hospitals because of As than asthmatic patients without AR, as a rule, the more severe rhinitis, the more severe the course of As itself.

AIM. Identification of the level of sensitization to cause-significant allergens in patients with a combination of As and AR living in the South of Russia.

METHODOLOGY. A complex study of 54 patients – 33 (61,1%) females and 21 (38,9%) males - with AR (seasonal (SAR) n=37 and chronic (CAR) n=17) and moderately severe As at the age of 19-54. The methods were as follows: physical methods of examination, spirometry («SPIROSFT-3000»), asthma control questionnaire (ACQ-5), endoscopic study of the nasal mucosa, molecular diagnostics of allergen extracts by Phadia IDM «ImmunoCAP-100». For statistical analysis of the obtained data MS Office Excel software was used.

RESULTS. All the patients complained of itching in mucosal coatings of their eyes and nose, nasal watery discharge, periodical nasal stuffiness, difficulty breathing. Oral allergy syndrome (OAS) was diagnosed in 7 cases; results of the test on As signs and symptoms revealed an insufficient control over As (ACQ-5: 2,75±0,5 points). Study of their life history found out an aggravated hereditary background of AR in 21 patients. Clinical manifestations were accompanied with a reduced function of the lungs (FEV1: 69,0±3,2%). Results of molecular diagnostics were as follows: high titresof Amb a1 were found out in 12patients with SAR (32,4%) (15,1±2,5 kUa/L), 8 cases (21,6%) had a combination of Amb a1 + Art v1 (19,1±1,92 kUa/L and 17,1±0,76 kUa/L), respectively, 5 cases (13,5%) - Phl p1 (16,2±2,44 kUa/L) and Alt a1 (4,7±1,42 kUa/L) - the main allergen of Alternaria associated with the development of asthma. 17 patients with CAR underwent endoscopic of their nasal mucosa that dryness, hyposmia, hyperplasia of the inferior nasal concha as well as high values of Der p1 (4,2±1,4 kUa/L) in 6 cases (35,3%), Alt a1, n=4 (23,5%) (3,8±1,6 kUa/L) and of Fel d1 (3,5±1,4 kUa/L) in 3 (17,6%) ones.

CONCLUSION. Molecular diagnostic procedures along with standard methods of study of AR and As make it possible to understand the structure of sensitization, improve control over As, alleviate signs and symptoms of AR as well as reduce the necessity of provocative testing and make it possible to provide AIT on a reasonable basis.

COMPONENT ALLERGY DIAGNOSTICS AS A TOOL FOR THE MANAGEMENT OF PATIENTS WITH ALLERGIC DISEASES

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Molecular diagnostics allows for differential determination of the primary and cross-reactivity, which has important clinical value for the diagnosis of the true spectrum of sensitization, a reasonable choice of allergen-immunotherapy (AIT). We present clinical cases. Patients M., 27 years old and R., 29 years old complained about periodic (spring—summer) rhinoconjunctivitis over the past 10 years and symptoms of asthma in the same period last 2 years. Heredity for allergic diseasesis not burdened. They were examined by an allergist. The results of skin testing (prick tests): Patient M.: mixed meadow grasses (4+), mixed weeds (4+), ragweed (3+), wormwood (3+). ImmunoCAP analysis for s-IgE: timothy 48,0 kUa/l, ragweed 6,9 kUa/l, wormwood 5,4 kUa/l. Patient R.: mixed meadow grasses (4+), mixed weeds (4+), ragweed (3+), wormwood (3+). ImmunoCAP analysis for sIgE: timothy 22,0 kUa/l, ragweed 8,1 kUa/l, wormwood 11,6 kUa/l. In both cases, similar anamnesis and skin and laboratory testing data were noted. Diagnosis in both patients: Allergy to pollen of timothy and birch. Treatment: symptomatic in the period of exacerbation.In order to specify the expediency and reasonableness AIT, the correct choice of vaccines for allergy, determine favorable prognosis of a successful outcome of the AIT, it is necessary to determine the primary source that sensitizes IgE. To this end, these patients were recommended to be tested for allergen components. Test results for ImmunoCap allergen components (kUa/l): patient M.: Phl p1 – 22,0; Phl p2 – 3,8; Phl p4 – 1,8; Phl p5b – 11,0; Phl p6 – 7,0; Phl p11 – 2,7; Phl p7 <0,1; Phl p12 – 7,3; Amb a1<0,1; Art v1 <0,1; Art v3<0,1; Art v4 -4,2, Art v5-1,4. Diagnosis: pollen allergy Timothy. Treatment: AIT the allergen of Timothy. The response to profilin (Phl p12 and Art v4) explains the positive result when using wormwood extract. Patient R.: Phl p1 <0,1; Phl p2 <0,1; Phl p4 <0,1; Phl p5b <0,1; Phl p6 <0,1; Phl p11 <0,1; Phl p7 – 9,7; Phl p12 – 2,1; Bet v1 <0,1; Bet v2– 7,6; Bet v4 – 3,2. Amb a1-11,6; Art v1 <0,1; Art v3<0,1; Art v4 <0,1, Art v5 – 3,6. Diagnosis: Allergy to ragweed pollen. The lack of primary allergy to meadow grasses. Treatment: Sublingual AIT with ragweed allergen. The positive result from wormwood extract was explained by the response to polcalcin (Phl p7 and Art v5).

CONCLUSION. Molecular diagnostics allows for differential determination of the primary and cross-reactivity.

OMALIZUMAB IN THE TREATMENT OF SEVERE UNCONTROLLED BRONCHIAL ASTHMA IN CHILDREN

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BACKGROUND. Due to a significant breakthrough in approaches to the diagnosis and treatment of asthma in the world medical community over the past decades, it was possible to significantly reduce the mortality rate from this disease, but a further decrease in this indicator has not been observed since 2006 to the present. Treatment of severe BA is a significant economic burden for many economically developed countries, and can take up to 29% of family income. In this regard, there is a need to develop and introduce into clinical practice new biological drugs for the treatment of asthma, the main goals of which are complete control, reducing the risk of exacerbations and a high quality of life in all patients. One of these drugs is omalizumab.

AIM: to analyze the efficacy and safety of the omalizumab in children with severe uncontrolled bronchial asthma (BA).

MATERIALS AND METHODS. Design: prospective cohort study. The study included 10 children with severe uncontrolled BA. The patients received omalizumab, depending on the level of total IgE and body weight, once every two or four weeks. General clinical, biochemical studies of all children, spirometry, study of peak expiratory flow rate, chest x-ray once a year, monitoring of oxygen saturation were carried out. To assess the degree of BA control, the AST and ASQ questionnaires were used.

RESULTS. On the treatment with omalizumab, all 10 children showed positive dynamics. The frequency of exacerbations per year, the number of symptoms per week decreased, the attacks became milder, sometimes they were stopped on their own without bronchodilators. In all children, nocturnal symptoms disappeared, exercise tolerance improved, BA exacerbations against the background of a respiratory infection practically disappeared, and during pollination the attacks became more rare and did not require an increase in the volume of basic therapy. The volume of basic therapy was reduced after 6 and 12 months in all participants: montelukast was canceled in 6 children, the dose of inhaled glucocorticosteroids was reduced by 30-50% in 5 children.

CONCLUSION. The addition of omalizumab to the basic therapy of severe persistent uncontrolled asthma significantly improves control over the disease, reduces the risks of future exacerbations, and improves the quality of life of sick children.

THE VALUE OF TOLL-LIKE RECEPTORS IN THE IMMUNE RESPONSE IN ATOPIC DERMATITIS IN CHILDREN

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Most children suffering from atopic dermatitis have colonization of the skin with Staphylococcus aureus, which causes the severity of the disease. Recognition of microorganisms by immune cells triggers the activation of Toll-like receptors (TLR) expressed on mononuclear cells and granulocytes, which leads to an inflammatory response.

The study included 67 children aged 5-10 years with moderate atopic dermatitis, who were seeded with scrapings on the microflora from the affected skin areas, the level of anti-α-staphylolysin (ASL), the activity of TLR 2 and TLR 6 on monocytes, lymphocytes and neutrophils.

In the majority of patients with atopic dermatitis, Staphylococcus (St.) colonization of the skin was detected during the acute period (94.4%). In the period of exacerbation of the disease, St. aureus was seeded in 71.8% of patients, St. aureus + St. epidermidis or St. aureus + St. saprophyticus associations were seeded in the remaining patients, and there was a marked increase in the ASL content (2.87±0.41), ($p<0.001$) in serum blood in comparison with healthy children (1.20±0.17). The study of TLR on immune cells during the period of exacerbation of the disease showed an increase in the density of TLR2 expression on lymphocytes (2.58±0.31) ($p<0.001$) in comparison with healthy children (1.36±0.13), while no significant changes in expression on monocytes and neutrophils were registered. There were no significant changes in TLR6 expression on lymphocytes, monocytes, and neutrophils in patients with atopic dermatitis during the acute period of the disease. In the period of clinical remission in patients with atopic dermatitis , the content of ASL in the blood serum remained elevated (2.41±0.30) ($p<0.001$), there was an increase in the density of TLR2 expression on lymphocytes (2.34±0.34) ($p<0.001$), an increase in the relative number of neutrophils expressing TLR6 (0.19±0.03) ($p<0.001$) in comparison with healthy children (0.05±0.01), and an increase in TLR6 expression on neutrophils (2.20±0.12) ($p<0.001$) compared to healthy children (1.73±0.13), increased TLR6 expression density on monocytes (2.44±0.44) ($p<0.001$) compared to healthy children (1.51±0.17).

It was found that patients with atopic dermatitis have colonization of the skin with Staphylococcus, an increase in ASL in the blood serum. Impaired TLR function can contribute to increased sensitivity to bacterial infection, the spread of rashes, and thus participate in the pathogenesis of the disease.

HYPERSENSITIVITY IN ADVERSE REACTIONS TO ANTIBIOTICS: AGE DIMENSIONS

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INTRODUCTION: Drug hypersensitivity is a pressing issue in practical health care, due to the possibility of severe allergic reactions that require long-term treatment and hospitalization. Among all groups of drugs, antibacterial drugs, clinical manifestations of reactions to which are extremely diverse, take the lead.

STUDY PURPOSE: The study aims at identification of the most significant groups of antibacterial drugs causing adverse reactions, determination of the spectrum of these reactions and identification of features of clinical manifestations of drug hypersensitivity in patients of different age groups.

MATERIALS AND METHODS: The study was conducted over the period from 2017 to 2020 in the Tyumen Regional Hospital No1. Out of 3,650 primary outpatients, 200 people were included in the study diagnosed with the pathological response to an unspecified drug or medicine. All reactions to drugs were specified according to narrative patient histories and allocated to dichotomous variables. Each episode of a drug hypersensitivity was taken as a unit and considered a case. In total, we identified 516 cases, 99 of which were related to the use of antibacterial drugs. We singled out 3 groups of patients: from 18-44 years old (n=49); 45-60 years (n=60); 61 and above ages (n=91). We analyzed the results of our research using parametric and non-parametric statistics.

RESULTS: Among antibacterial drugs in all three age groups, penicillin series (1 group 42,86%, 2 group 50%, 3 group 50%) and cephalosporins (1 group 28,57%, 2 group 26,67%, 3 group 12,5%) took the lead. That corresponds to antibiotics distribution in the group in patients from the general sample (48,48% penicillin's, 20,2% cephalosporin's).

When it comes to clinical manifestations on antibacterial preparations in the general sample, there were reactions in the form of dermatitis (31,4%) and angioedema (23,14%) most often, rhinitis was not registered.

The most common reactions of drug hypersensitivity to penicillin's series, in the general sample were 36,21% dermatitis and 20,69% angioedema and hives.

The distribution of reactions on the cephalosporin group differed, as was taken by anaphylactic shock (40%), the second and the third places were taken by angioedema (28%) and urticaria (12%). There was no itch caused by penicillin and cephalosporin series.

When comparing clinical manifestations of drug hypersensitivity to antibiotics of penicillin and cephalosporin series, no reliable differences were obtained.

THE PREVALENCE ASPERGILLUS SPP. AMONG PATIENTS WITH BRONCHIAL ASTHMA AND THEIR SENSITIVITY TO ANTIMICOTICS

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RELEVANCE. The prevalence of allergic bronchopulmonary aspergillosis and BA with fungal sensitization in Uzbekistan is 2.8 and 3.7 per 100,000 patients, respectively. Information on the regional characteristics of fungal strains to existing antimycotics is extremely important, because, given the frequent critical situations requiring immediate administration of antimycotics, it becomes necessary to prescribe empirical antifungal therapy, without waiting for the determination of the sensitivity to antimycotics.

THE AIM of the study is to determine the prevalence of various Aspergillus spp. among BA patients and to assess their sensitivity to antimycotics.

MATERIALS AND METHODS. On the basis of the Research Institute of Epidemiology, Microbiology and Infectious Diseases, Uzbekistan, 42 BA patients were examined before treatment. The diagnosis of BA was made on the basis of anamnesis, complaints, clinical examination and the results of laboratory and instrumental studies. Aspergillus spp. diagnosed with mycological inoculation method on Soburo Agar Wednesday. Identification of the species Aspergillus spp. carried out by microscopy of the isolated cultures. The results were confirmed by ELISA, by determining IgG antibodies to Aspergillus spp. With Aspergillus spp. in sputum, the sensitivity of the isolated fungi to antifungal drugs was determined in vitro. Statistical processing was performed using the OriginPro 6.1 software.

RESULTS. Of 42 BA patients, Aspergillus spp. were identified in 16 (38.0 ± 7.4%), of which 8 (50.0 ± 12.4%) Aspergillus fumigatus, 4 (25.0 ± 10.8%) Aspergillus niger and 4 (25.0 ± 10.8%) Aspergillus flavus. In 5 (11.9 ± 4.8%) and 2 (4.7 ± 2.1%) BA patients, abundant growth of Candida spp. Was determined. and the simultaneous growth of Aspergillus fumigatus and Candida spp, respectively. IgG to Aspergillus spp. was positive in 28 (66.7 ± 7.2%) BA patients. All selected species of Aspergillus spp. were highly sensitive to amphotericin B, voriconazole and nystatin. Medium sensitivity Aspergillus spp. was determined to ketoconazole and fluconazole. Resistant species Aspergillus spp. were not identified.

CONCLUSIONS. The predominant species Aspergillus spp. in BA patients, Aspergillus fumigatus is detected in 50% of cases. Sensitivity to antimycotic drugs persisted in all cases; amphotericin B, voriconazole and nystatin are the most active antimycotic drugs.

AZACITIDINE BLOCKADE OF LOCAL B-CELL SWITCHING TO IGE SYNTHESIS

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Type I respiratory allergy is mediated by the formation of IgE to harmless proteins that enter from the environment through the nasal and oral mucosa. The amount of protein passing through the mucosal barrier is exceptionally low. Based on these data, we developed a low-dose allergy model in mice that showed that prolonged administration of 50-300 ng/mouse of protein in saline when injected to the withers caused significantly more pronounced IgE production than the administration of 2-10 ug/mouse. Introduction of the allergen in a low dose to the hind leg or intraperitoneally did not cause the formation of IgE, which shows the presence of a special microenvironment in the withers. Similarly, the formation of extrafollicular zones in nasal polyps in rhinosinusitis, was shown in which IgE transcripts were detected. It can be assumed that in mice, too, B cells switch to IgE synthesis occurs locally, in the withers region.

Recombination of B-cell immunoglobulin genes is regulated by activation-induced cytidine deaminase (AID). Removal of the AID site in CH12F3 B-lymphoma cells completely stops the switching of B cells to the synthesis of other classes of immunoglobulins and, accordingly, blocks the hypermutation of variable regions of immunoglobulins. 5-Azacitidine (Aza) is an analog of the pyrimidine nucleoside cytidine. Molecular docking methods and in vitro experiments have shown that Aza effectively blocks AID synthesis.

The aim of this work was to analyze the effect of a local administration of Aza in a low-dose model of allergy to Phl p1.

BALB/c mice were divided into 4 groups. Group I was injected into the withers 3 times a week with 100 ng of Phl p1 in saline until the appearance of IgE (4-5 weeks). Group II was administered Aza at a dose of 50 ug/mouse a week before immunization. Group III received Aza along with Phl p1. Group IV received Aza one week after the start of immunization. Analysis of IgE and IgG formation was performed using the ELISA method.

It was shown that in the control group I IgE titers were 140±112, in groups II-IV - 0, 0 and 24±20, respectively, which is significantly lower than in the control I group. IgG titers were 24, 9, 24 and 13 thousands respectively. There was no significant difference in IgG titers.

Thus, local administration of Aza at the early stages of allergic sensitization leads to a decrease in IgE titers and, accordingly, can be used for allergy therapy.

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POLYVALENT ALLERGY IN CHILDREN WITH ORAL ALLERGIC SYNDROME LIVING IN THE URAL REGION. SENSITIZATION STRUCTURE

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This research was aimed at studying the sensitization spectrum in children with polyvalent allergies, from the perspective of determining their true responsiveness and cross-sensitization for further planning of preventive and therapeutic measures. The study included 47 children with polyvalent allergy and with oral allergic syndrome to fruits (aged 2 to 16, mean age 6.34±4.2), 34 boys and 13 girls. 19 children of 47 patients (40.4%) were determined a diagnosis of bronchial asthma, 34 (72.3%) presented seasonal rhinoconjunctivitis, 17 (36.2%) with atopic dermatitis, oral allergic syndrome (100%).

The examination was conducted by means of molecular allergy diagnostics using a panel to determine the IgE antibodies level to 112 allergenic molecules (ISAC). ISAC standardized units - ISU-E.

It was found that children with polyvalent allergy the most often reveal true sensitization to main specific components of inhaled allergens, to birch rBet v1 in 80.85% (18.92±3.59) and to cat: rFel d1 in 51.06% (14.83±2.75) cases. We detected sensitization to timothy grass pollen: rPhl p1 in 23.4% (6.65±0.79) and to wormwood: nArtv1- in 19.15% (4.63±0.75) cases.

The most often sensitization to food-based allergens was: to nBosd4 in 21.28% cases (8.04±2.12), nBosd5 in 12.77% (5.32±1.19) and nBosd8 in 12.77% (12,78±2.23) cases, nGal d2 in 19.15% (1.96±0.30) and nGald1 in 12.77% (3.45±0.44) cases. True sensitization to peanuts was: rAra h1 in 19.15% (4.19±0.66), rAra h2 in 12.77% (7.58±0.93), rAra h6 in 10.64% (3.56±0.21). Sensitivity to other food-based allergens was revealed in isolated cases.

The most frequent detected proteins of cross-reacting components were the PR-10 family ones. Sensitization to hazelnut rCor a1.0401 - in 63.83% (6.87±1.31), to apple Mal d1 - in 55.32% (9.0±2.2), to peach Pru p1 - in 46.81% (4.43±0.81), to peanut rAra h8- in 42.55% (2.81±0.62), to soybeans nGly m4 – in 23.40% (2.82±0.52).

The undertaken studies resulted in our ability to identify and differentiate true IgE-mediated sensitization and cross-reactivity in children with polyvalent allergy and with oral allergic syndrome, to find and plan further most accurate allergen-specific immunotherapy for patients, to develop and correct the individual diet for each child.

PREVALENCE OF FOOD ANAPHYLAXIS IN PAEDIATRIC POPULATION OF YEKATERINBURG

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The number of patients suffering from allergy is increasing worldwide. This trend also applies to the pediatric population of Russia. The growth rate certainly depends on the country region, the natural landscape, ecology and cuisine features of the area.

To study the prevalence of allergic diseases in the pediatric population of Ekaterinburg, early in the year 2020, 5000 parents, whose children attend preschool or school educational institutions of the city (2-18 years old), were questioned in the survey. The questionnaire survey was carried out in the city educational institutions, and it was voluntary. According to official statistics, as of January 1, 2020, the number of children in Ekaterinburg is 317 thousand. The developed questionnaire was based on the ISAAC questionnaire (1999), translated into Russian.

2461 completed questionnaires were returned, 1112 (46.3%) of which had negative answers of parents to all questions about allergies, 1288 (53.7%) questionnaires contained positive answers, 61 questionnaires were filled in incorrectly and dropped out of the study. In 2400 questionnaires, parents described symptoms of allergic rhinitis (AR) in children in 20.5%, symptoms of bronchial asthma (BA) in 10.1%, recurrent allergic urticaria (AU) with and without symptoms of angioedema in 6.2%, anaphylaxis (ANA) in 1.08% of cases.

According to questionnaires, 2-17 years old children had symptoms of anaphylaxis (boys - 62%, girls - 38%), 88.5% of which cases were caused by food, and 11.5% - by medicines (iodine, pain-killers and vaccines). In the group of children with ANA, 80.7% of them had clear atopic diseases: AR-61.5%, AU- 57.7%, BA- 46.2%, AD- 26.9%. In children with food anaphylaxis, symptoms were caused: in 19.2% of cases by cow milk (2-11 years old), in 11.5% - by chicken egg (4-11 years old) and fruit (8-15 years old), in 7,7% - by fish (5-14 years old), nuts (12-14 years old), wheat (5-8 years old), and in 3.8% - by rice, honey, peas, food additives. The survey didn't reveal children with ANA to shrimps and seafood. The number of emergency calls for the ANA children was 1.6 times per each person per year.

THE RELATIONSHIP BETWEEN VITAMIN D LEVELS, VITAMIN D BINDING PROTEIN AND BRONCHIAL ASTHMA

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The vitamin D axis, which includes Vitamin D, Vitamin D-binding protein (VDBP), and the Vitamin D receptor, has been found to regulate immunomodulatory functions that may be of particular relevance in asthma. Serum Vitamin D is the most typically used surrogate of the Vitamin D axis to explore the impact of the axis on clinical asthma expression. However, the findings are controversial.

Our study involved 80 patients with bronchial asthma, of varying severity. The control group consisted of 50 patients without bronchopulmonary pathology. All patients underwent a study of vitamin D and VDBP. An enzyme-linked immunosorbent assay (ELISA, Cloud-Clone Corp.) method was used to measure the serum Vitamin D and VDBP.

The average level of Vitamin D in 80 patients with BA was significantly lower - 18.83 ± 3.73 than in 50 subjects of the comparison group (without bronchopulmonary pathology) - 27.47 ± 3.65ng/ml ($p = 0.001$). At the same time, the level of vitamin D in patients with BA with a late onset of the disease was significantly lower and amounted to 15,07 ± 6.79 ng/ml than with a duration of BA more than 10 years - 24.18 ± 6.57 ng/ml ($p = 0,03$). The level of vitamin D was significantly lower in the group of patients with severe uncontrolled asthma than in the other groups. Moreover, the minimum vitamin D content in patients with severe BA was 5,088 ng/ml, which is a pronounced deficiency of 25 (OH) D and requires correction. Vitamin D deficiency is a marker of deterioration in the course of BA ($r =-0.54$, $p=0.0002$), and leads to more and more severe exacerbations ($r =-0.42$, $p=0.0003$). On the other hand, serum VDBP concentration increased in patients compared to controls (1,66 ± 0.59 and 0,59 ± 0.13 μg/mL, respectively), and the difference between groups for VDBP was statistically significant ($P < 0.05$). Our results also revealed a direct correlation between high level of serum VDBP and development of asthma.

Therefore, a low level of 25- (OH) D and high level VDBP may be one of the risk factors for asthma.

SENSITIZATION TO POLLEN SALSOLA KALI DEPENDS ON THE AGE OF THE PATIENTS

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Representatives of the species Salsola kali are widely distributed in Uzbekistan and can be considered as one of the important allergen sources of our Republic in the development of symptoms of respiratory allergies.

The aim of the study was to study the characteristics of the IgE profile of sensitization to weeds, and in particular, to Salsola kali, depending on the age of patients with respiratory allergies residing in the city of Tashkent.

Using the ALEX Allergy Test (Macro Array Diagnostics), 401 patients were tested for serum with confirmed respiratory allergy symptoms. Analysis of IgE sensitization profiles for allergenic molecules and statistical analysis of the data were performed using IBM SPSS 20 and Microsoft Excel.

Analysis of sensitization profiles showed that among 401 patients, specific IgE for Salsola kali was detected in 154 people, which is 38%, which indicates that this allergenic source is predominant in sensitization to weeds presented in the research chip. Most often, sensitization to Salsola kali was determined in patients aged 4 to 18 years - a total of 98 cases (almost 64% of all sensitive to Salsola kali), with the largest number of allergies sensitized to this source of allergy being in the group of "children" aged 4 -11 years - 53 cases - almost 34.5% of all identified cases of sensitivity to Salsola kali. In the groups of patients aged 19-29 and 30-45 years, a smaller number of cases was observed - 28 patients each (on average, this is 18% for each age group). No statistically significant gender features in sensitivity to Salsola kali were detected.

The data obtained confirm the need for the inclusion in the region of chip diagnostics of the major allergen Sal k1, as well as the implementation of preventive and preventive measures for allergic sensitization to Salsola kali, especially in patients under the age of 18.

CLINICAL AND IMMUNOLOGICAL ASPECTS OF THE CAUSES OF THE DEVELOPMENT OF RECURRENT EXUDATIVE OTITIS MEDIA

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Relapsing exudative otitis media (REOM) is a chronic recurrent disease with the presence of exudate in the tympanic cavity, preserved by the tympanic membrane, hearing loss, and absence of pain. EOM is distinguished by its duration and resistance to standard therapy.

Purpose of the study - determine the clinical and immunological aspects of the causes of the development of recurrent exudative otitis media.

MATERIALS AND RESEARCH METHODS. This research was carried out in the period from 2017 to 2020. Of 890 patients with ENT-pathology, recurrent EOM was detected in 100 (11.2%) patients aged 16 to 89 (mean age 53.2). Of these, there were 54 women (60%), men - 36 (40%).

All patients underwent a comprehensive examination: otorhinolaryngological examination and endoscopic examination of ENT-organs, tone threshold audiometry, cytological examination of exudate, computed tomography (CT), bacteriological examination of exudate from the middle ear cavity. Standard allergic examination: collection of an allergic history, skin scarification tests with household, pollen, epidermal allergens, determination of general and specific IgE in the blood. The immunological study used the method of staging reverse transcription and the method of polymerase chain reaction.

RESEARCH RESULTS. During the examination of 100 patients with ESO, 20 (20%) patients were diagnosed with allergic diseases, 25 (25%) - otoligorrhea and 55 (55%) - pathology of the nasal cavity and paranasal sinuses (SNP).

Immunological examination was carried out in 30 patients with REOM;

In group 1 of patients with REOM and obstruction of the auditory tube (n = 18), an increase in the expression of IL-1β by 11.4 times, antimicrobial peptides HBD1 by 11 times and HBD2 by 17 times was revealed compared to the level of these indicators in patients of group 2 of the study.

In 12 patients, patients with REOM and the patency of the auditory tube, the expression of TGFβ was 1.5 times higher, than in group 1 of patients.

CONCLUSIONS

1. It was found that out of 100 patients with REOM, 55% had nasal cavity and SNP pathology, 25% had otolikvorrhea and 20% had allergic diseases, which indicates the need for a comprehensive examination of patients.

2. The influence of the innate immune response (SIV) on the pathogenesis and course of inflammation in the middle ear has been shown.

POTASSIUM, AMMONIUM AND CALCIUM SALIVA CATIONS LEVELS AS BIOMARKERS OF APPLE ALLERGY

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Despite the fact that apples are considered hypoallergenic foods, every year the number of cases of allergic reactions to them are growing. Fruit intolerance occurs in 11.5% of children and 6.6% of adults, 8.5% of whom have a history of allergic reactions to apples. In Europe, up to 2% of the population notes apple intolerance.

THE AIM. Evaluation of the value changes in potassium (K+), ammonium (NH4+) and calcium (Ca2+) ions levels in the oral fluid (OF) after a low-dose oral-pharyngeal challenge test (LDOPCT) in patients with apple allergy.

MATERIALS AND METHODS. 31 people were examined. The study group included 21 patients with apple allergy, confirmed by a positive prick-prick test with fresh apple Golden Delicious. The control group - 10 healthy volunteers. All participants underwent LDOPCT with freshly prepared apple juice Golden Delicious (5 PNU/ml). K+, NH4+, and Ca2+ ions levels in the OF samples before and after provocation were estimated by capillary electrophoresis.

RESULTS. The average K+ level in the OF in the study group before LDOPCT was 41,9 mg/l, after – significantly increased 60,6 mg/l, p=0,0001. In the control group, K+ level in the OF wasn't significantly change after provocation (before – 46,2 mg/l, after - 43,4 mg/l, p=0,9). In the study group, NH4+ level was significantly higher before provocation (14,98 mg/l), than after (12,9 mg/l), p=0,039. In healthy volunteers, there was no significant change in NH4+ level after provocation (before – 9,0 mg/l, after – 5,96 mg/l, p=0,17). In patients with apple allergy the average Ca2+ concentration was 1,09 mg/l before the test and after the test – 1,31 mg/l, p=0,31. The saliva Ca2+ level in healthy people wasn't change significantly after the provocation. Most of the patients with apple allergy and confirmed sensitization by prick-prick test showed a significantly higher K+ (p=0,02) and Ca2+ (0,01) ions levels after LDOPCT compared with control group with negative skin tests. In patients with apple allergy, the baseline NH4+ level was significantly higher in compared with healthy people (p=0,019).

CONCLUSIONS. The change in K+, NH4+, Ca2+ ions levels after provocation with apple juice can be used as biomarkers of an allergic reaction. Evaluation of ions levels after a low-dose oral-pharyngeal challenge test allows the diagnosis of apple allergy without causing clinical allergic reactions.

INFLUENCE OF YEAR-ROUND SUBLINGUAL ALLERGEN SPECIFIC IMMUNOTHERAPY ON LABORATORY INDICATORS OF CHILDREN WITH MILD PERSISTENT BRONCHIAL ASTHMA

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BACKGROUND. Allergen specific immunotherapy (ASIT) is the main pathogenetic method of treating IgE-dependent allergic diseases. This method has been successfully used for over a century, the clinical effectiveness of ASIT reaches 90%.

AIM. To determine the effect of year-round sublingual allergen-specific immunotherapy on the level of blood, nasal secretion and induced sputum eosinophils in patients with mild persistent bronchial asthma.

MATERIALS AND METHODS. The study included children (n=42) with a diagnosis of mild persistent bronchial asthma (BA). Some children (group 1, n=18), together with inhalation glucocorticosteroid therapy (ICS) and nasal glucocorticosteroids, were prescribed year-round sublingual allergen specific immunotherapy. The second group of children (n=24) did not receive ASIT. At the beginning of the study and at each visit, all patients underwent determination of the level of eosinophils in a complete blood count (CBC), nasal secretion (NS), and induced sputum (IS). We divided the study period into 3 stages: controlled asthma, asthma remission and asthma exacerbation.

RESULTS. Concomitant allergic rhinitis was found in 100% of patients. Plant sensitization was detected in 34 children (79.0%), household sensitization - in 31 (72.0%), epidermal sensitization - in 29 (67.4%). In the period of controlled asthma in group 1 the number of children with an increased level of IS eosinophils was 7 (38.9%), in NS - 6 (33.3%), in CBC - 3 (16.7%). In group 2, there were 10 children (41.6%) with an increased level of eosinophils in IS, in NS - 13 (54.2%), in CBC - 4 (16.6%) ($p > 0.05$). In the period of BA remission in group 1, the number of children with an increased level of IS eosinophils was 7 (38.9%), NS - 12 (66.7%), CBC - 2 (11.1%). In group 2, the number of patients with an increased level of IS eosinophils was 9 (35.7%), NC - 13 (54.2%), CBC - 0 ($p > 0.05$). In the period of BA exacerbation in group 1 the number of children with an increased level of IS eosinophils was 16 (88.9%), NS - 16 (88.9%), CBC - 10 (55.6%). In the group 2 the number of patients with an increased level of IS eosinophils was 20 (83.3%), NS - 19 (79.2%), CBC - 6 (25.0%).

CONCLUSION. In this study, no differences were found in the level of eosinophils of IS, NS and CBC in children receiving and not receiving year-round sublingual allergen-specific immunotherapy.

CROSS-FOOD ALLERGY WITH MANIFESTATIONS OF PERENNIAL ALLERGIC RHINITIS AND SKIN ALLERGIC SYNDROME WITH TRUE SENSITIZATION TO PR10

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INTRODUCTION. Currently, the role of molecular allergiagnostics in the differential diagnosis of cross-reactivity with allergens of plant origin has been proved.

OBJECTIVE. To identify possible causes of cross-reactivity with plant-derived products in patients with perennial allergic rhinitis (PAR) associated with skin allergic syndrome (SAS).

Materials and methods. Under our supervision were 13 patients of both sexes, aged 23 to 60 years with allergic rhinitis (AR) in combination with SAS (atopic dermatitis, urticaria, etc.). All patients were examined by the Immunocap ISAC method. The group includes patients with whom an allergic examination by the ELISA method was previously carried out. Adequate statistic processing was carried out.

RESULTS. Clinical symptoms of PAR occurred in all studied patients . An increase in the level of total IgE was found in 53.8%. In 15.4% of cases, sensitization to household allergens was established by enzyme immunoassay. In 61.5% of patients in this group, clinical symptoms of PAR and SAS were noted for food allergens (egg, fish) and histaminoliberator products, in 15% - for apple, cherry, apricot. In this group of patients, 76.9% of cases showed sensitization to pollen of grasses and trees (birch, timothy, wormwood, pig-grass), while only 23.1% of patients showed minimal clinical symptoms of AR in the spring-summer period.

In patients sensitized to grass and tree pollen, an Immunocap ISAC study was conducted. In 50% of cases the allergy to the cross reacting components of birch pollen allergen PR10 which structure is homologous to proteins of family Nut (nuts), fruits (apples, apricots, peaches, sweet cherry), vegetables (carrots, a celery) and spices is detected.

It is known that sensitization to PR-10 often develops oral allergic syndrome. At the same time, patients of the study group who had sensitization to PR-10 had cross- reactivity food allergy that manifested PAR and SAS.

CONCLUSION. A study by the Immunocap ISAC method in patients with PAR associated with SAS showed that 50% of patients with confirmed pollen sensitization showed a true allergy to cross-reacting components of the allergen PR10, which made it possible to clarify the causes of food allergies demonstrating KAP and KAS, optimize the hypoallergenic diet and achieve clinical remission.

CLINICAL USE OF VARIOUS DRUGS AS BIOLOGIC TARGETED THERAPY FOR SEVERE UNCONTROLLED ASTHMA

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INTRODUCTION. Several biologic drugs are currently used to treat patients with severe T2 asthma, targeting IgE or T2 cytokines (IL-5, IL-4/13). Choosing drugs for particular patients, especially for patients with the combined (allergic and eosinophilic) T2 phenotype of asthma is a challenge.

MATERIALS AND METHODS. We studied three patients with severe uncontrolled T2-type asthma (GINA steps 4 to 5), concomitant polypous rhinosinusitis, high peripheral blood eosinophil counts (> 300 cells/μl), and sensitization to one or more allergens, confirmed with specific IgEs detected.Total IgE levels in all patients were >100 IU/ ml.

All patients took part in a clinical study and were treated for 2 years with dupilumab, an antibody binding IL-4/13 signaling, with a pronounced clinical effect. After the termination of the study, when the asthma control worsened, omalizumab was prescribed, for 12 months in total, with a moderate effect in two patients and no effect in one. The patients were then switched to anti-IL-5 therapy with mepolizumab, with good effect in two patients and little improvement in one patient. Table 1 shows the lung function (FEV1) in patients before and during treatment with various biological agents.

Table 1. Lung function values (FEV1) in patients at baseline and on treatment

FEV1	At baseline	Dupilumab	Omalizumab	Mepolizumab
Patient 1	53%	83%	56%	74%
Pat. 2	27%	36%	24%	29%
Pat. 3	45%	98%	50%	78%

All patients first had complaints on nasal breathing impairment and anosmia. On treatment with dupilumab, all patients recovered their nasal breathing and sense of smell; on treatment with omalizumab, the complaints of impaired nasal breathing and anosmia returned; while on treatment with mepolizumab, anosmia and problems with the nasal breathing persisted in 1 patient. Table 2 summarized peripheral blood eosinophils counts in patients at baseline and on treatment with various biologic drugs.

Table 2. Blood eosinophil counts in patients at baseline and on treatment

(cells/μL)	At baseline	Dupilumab	Omalizumab	Mepolizumab
Patient 1	320	130	250	230
Pat. 2	310	190	270	180
Pat. 3	660	210	410	315

CONCLUSIONS. Our experience of the use of different biologics in targeted therapy for severe uncontrolled T2 asthma with combined phenotype (allergic and eosinophilic) and concomitant polyposis rhinosinusitis demonstrated high efficacy of dupilumab, which could be considered a first-choice drug for such patients. As an alternative, mepolizumab may be used.

TJ CONTACTS AND ZONULIN SYSTEM IN THE FORMATION OF IGE-DEPENDENT AND IGE-INDEPENDENT COW'S MILK ALLERGY

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Cow's milk allergy (CMA) is the most common allergic disease in young children. The pathogenetic mechanism of CMA is associated with the increased intestinal permeability. The study of TJ contacts and Zonulin system may be informative in CMA.

The purpose of this study was to determine the fecal level of zonulin in children with Cow's milk allergy and to assess its pathogenetic significance in the formation of IgE-dependent and IgE-independent CMA.

MATERIALS AND METHODS. It was clinical and laboratory examines 39 children with food allergy to the cow milk protein at the age of 6 months to 3 years (Group I). The comparison group (group II) consisted of 30 healthy children. sIgE was determined by the Immunocap method. Zonulin in feces was determined by enzyme-linked immunosorbent ELISA using reagents from Immunodiagnostik (Germany). Statistical processing of the data obtained was carried out using nonparametric statistical methods.

RESULTS. IgE-mediated CMA was confirmed in 69% of children (n = 45), non-IgE-mediated - in 31% of children (n = 23). It was revealed that most frequent sensitization in IgE-mediated CMA was determined to Casein nBos d 8 (in 58%), sensitization to Beta-lactoglobulin nBos d 5 was revealed in 45.9% of cases. It was noted the predominantly combined sensitization to different Cow's milk components, the combination of sensitization to nBos d 8 and nBos d 5 (in 20 children), and nBos d 5 and nBos d 6 (16 children). Mean concentrations of fecal zonulin in CMA children and in control group children were $1,79 \pm 0,16$ ng/ml and $0,75 \pm 0,01$ ng/ml, respectively ($p < 0.05$). Analyze of fecal zonulin in children with IgE mediated and non-IgE-mediated CMA show the significant ($p < 0.05$) change in different subgroups. Zonulin level in children with non-IgE-mediated CMA was increased by more than 2 times compared with IgE-mediated CMA children ($2,34 \pm 0,31$ ng/ml and $1,18 \pm 0,13$ ng/ml, respectively, $p < 0.05$).

CONCLUSIONS. The increase of intestinal permeability plays the important role in the CMA formation. The fecal zonuline is an informative criterion of intestinal barrier damage. Disregulation of TJ contacts and Zonulin system is more significant in the formation of IgE-independent CMA. So, Zonulin may be used to control intestinal permeability in physiology and disease, it will explain the clinical, pathophysiological, functional features of each individual patient and can optimize the algorithms of personalized therapy.

CLINICAL AND FUNCTIONAL PARALLELS BETWEEN THE COURSE OF BRONCHIAL ASTHMA IN PREGNANT WOMEN AND THE STATE OF HEMODYNAMICS

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Purpose and objectives: to study the clinical and functional features of the course of bronchial asthma (BA), pregnancy and delivery outcomes in 51 patients, indicators of intracardiac and renal blood flow in the dynamics of the gestational period.

MATERIAL AND METHODS. The average age of the patients was 24±1.9 years. The comparison group consisted of 35 pregnant women without concomitant pathology. Mild BA in 34 patients, moderate-in 14, severe-in 3. in 33 patients-allergic BA, 3–non–allergic, 15-mixed.

RESULTS. When assessing the diastolic function of the left heart in pregnant women with AD, the flow rate of early diastolic filling-Em and the Em/Am ratio were lower. Violation of right ventricular longitudinal diastolic function was detected in 45% of IVRT, 36% of ET/AT and 59% of MPI in pregnant women with controlled BA and 73 % of Ivrt, 65 % of ET/AT, 77% of MPI and 19% of TAM(S') in pregnant women with partially controlled BA. The study of blood flow through the renal vessels in pregnant women with BA revealed a decrease in the peak speeds of systolic and diastolic flows, at the level of the main, segmental, arc and interlobular arteries; and an increase in RI and PI at the levels of the arc and interlobular arteries. Ultrasound diagnostics of uteroplacental hemodynamics revealed a difference in the state of vascular resistance in the uterine artery basin at 20-24 weeks of gestation. The intensity of blood flow was lower in the observation group, which was expressed in an increase in the resistance index values to an average of 0.64±0.05. The resistance index in pregnant women with bronchial asthma was 0.65±0.05, while in the comparison group it was 0.58±0.04. At a gestation period of 35-40 weeks in patients with BA, the values of the pulsation index 1.26±0.05 of the fetal middle cerebral artery were significantly lower compared to pregnant women in the comparison group 1.38±0.03. Most gestational complications were observed in uncontrolled BA.

CONCLUSIONS. The features of hemodynamics in pregnant patients with BA were determined, violations of the processes of relaxation of the right heart, changes in speed indicators in the renal vessels and the utero-placental system were revealed, especially in uncontrolled BA, which requires special approaches to the appointment of an adequate amount of therapy.

MOLECULAR DIAGNOSTICS TO DETERMINE THE EFFECTIVENESS OF ALLERGEN-SPECIFIC IMMUNOTHERAPY (ASIT)

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BACKGROUND. Presented their own experience of using molecular diagnostics to determine the effectiveness of allergen-specific immunotherapy

MATERIAL AND METHODS. 130 studies have been conducted to identify the increased level of specific Ig E (asIgE) for molecular components in patients birch pollen rBet v1, rBet v2; rBet v4, timothy pollen rPhl p1, rPhl p 5b, rPhl p7, rPhl p12, and dust mites nDer p1, rDer p2 by ImmunoCAP Phadia IDM in patient with bronchial asthma (N=64), allergic rhinitis (N=66)

RESULTS. Sensitization to rBet v1 was detected in 87%, to rBet v2, rBet v4 in 16.1%; to rPhl p1, rPhl p 5b in 80%, to rPhl p7 rPhl p 12 in 16.1%; to nDer p1 in 66.6%, to nDer p2 in 91.6%.%, to nDer p10 in 8.3%. The data obtained indicate that the prevailing level of antibodies to the major component of birch rBet v 1 was very high and the level was above the detection limit, and the predominant level of antibodies to the minor component rBet v 2 was average sensitization; to the minor components of timothy was the sensitization of medium and high levels; to major components of timothy were the reactions of medium and high; to the main molecular components of house dust mites showed that for the main component was high levels.

CONCLUSION. The obtained data suggest that when evaluating the effectiveness of ASIT, it is also necessary to take into account the level of antibodies; maximum efficiency is predicted at a very high level (grade 5,50-100 kUA/l) and a level above the detection limit (grade 6,> 100 kUA / l) - according to this concept in case of specific treatment of a group of patients with an increased level of antibodies to the major molecular component of birch (rBet v 1) and the main allergen component of house dust mites (rDer p2) in combination with the middle and lower class of minor components.

IMMUNIZATION OF AN ALLERGIC CONDITION RESULTING FROM THE GRAPE CONSUMPTION

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RELEVANCE. Nowdays, vaccines have been developed against allergy to pollen of plants and trees, at the same time, vaccines against allergy to fruits have not been developed in Uzbekistan. As a result, allergic reactions to food and fruits, including grapes, increase. When the immune system is exposed to an allergen, antibodies (IgE) are produced to destroy it. These (antibodies) in turn release chemicals in the body that lead to an allergic reaction. It follows from the above that today the development of a vaccine against allergic conditions associated with the consumption of fruits is an urgent problem.

PURPOSE. Development of immunity in patients who are allergic to grapes.

MATERIALS AND METHODS of research. 43 patients with manifestations of an allergic reaction after grape consumption were selected. Of these, 18 people were admitted with acute skin manifestations in the form of blisters. 15 patients had chronic skin reactions in the form of blisters. 10 patients were admitted with Quincke's edema. All patients and their parents were interviewed in detail and anamnesis was collected. The patients underwent a blood test (with the determination of eosinophils), the level of specific IgE in the blood was determined. In immunological parameters of patients, IL4 IL9 IL12 was detected. After treatment, allergic conditions in all 43 patients disappeared and all patients underwent immunization against grapes. In the initial study, 43 patients had level of IgE above normal in the blood. It took 5 months to immunize patients with grape allergy, and during this period we got a positive trend.Before immunization, 42 patients were found to have IL4 IL9 IL12, and one was not.In 39 (90.6%) patients, their condition improved after immunization.

Before immunization, 43 patients were found to have Ig E in their blood; after immunization, 40 patients (93.02%) improved their condition.Before immunization, 42 patients had eosinophils in their blood, and one patient had none. 41 patients (95.3%) among 43 patients had improving their state after immunization.

CONCLUSION. In conclusion, I would like to say that after the course of treatment for immunization of patients with allergy to grapes, their condition changed for the better and patients, without fear, began to freely eat grapes.

CHANGES IN LABORATORY INDICATORS IN CHILDREN WITH MILD PERSISTENT BRONCHIAL ASTHMA IN DIFFERENT PERIODS OF THE DISEASE

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BACKGROUND. More than 10 years have passed since the method of induced sputum (IS) and the analysis of IS cytology were introduced into the practice of allergists in Chelyabinsk to diagnose and monitor bronchial asthma (BA) in children. The value of this technique lies in the fact that it allows for a more reliable and non-invasive early diagnosis of asthma in young children, as well as to assess the effectiveness of the basic therapy.

AIM. To trace the dynamics of laboratory parameters in children with mild persistent bronchial asthma at different periods of the disease.

MATERIALS AND METHODS. The design is a prospective cohort study. The study included 42 patients with mild persistent bronchial asthma aged 5 to 16 years. Each child was followed up for 3 years. At the beginning of the study and at each visit, all patients underwent determination of the level of eosinophils in a general blood test, nasal secretion (NS) and induced sputum (IS), eosinophilic cationic protein of blood serum, and a study of respiratory function. All children periodically received basic therapy with low doses of inhaled glucocorticosteroids (ICS). To describe the quantitative characteristics in the sample, the median and interquartile range (Me; 25-75%) were calculated.

RESULTS. Therapy with ICS and nasal corticosteroids in patients with asthma exacerbation helped to normalize the level of eosinophils (%) of IS and NS from 8.5 [4.0-20.0] and 11.0 [6.0-50.0] to 1.0 [0.0-0.3] and 4.5 [0.0-16.0], respectively ($p < 0.05$). In children in the period of BA remission, an increase in the level of eosinophils of NS and IS was noted, although the symptoms of rhinitis and BA did not bother the patients. The level of IS eosinophils was statistically significantly higher in comparison with the control period 4.0 [0.0-12.0] and 1.0 [0.0-0.3], respectively, but statistically significantly lower than the exacerbation period 9.0 [4.0-16.0]. The level of IS eosinophils (%) of which exacerbation of asthma occurred was 8.0 [3.0-16.0]. This marker can be used to assess the likelihood of asthma exacerbation.

CONCLUSION. The revealed changes in laboratory parameters in patients with mild persistent bronchial asthma indicate a predominantly eosinophilic inflammatory phenotype in children, regardless of the length of the disease and the courses of ICS, and the persistence of an increased level of induced sputum eosinophils during the period of BA remission.

SPECIFIC IGE TO MAJOR MOLECULES OF POLLEN ALLERGENS BEFORE AND AFTER ALLERGEN-SPECIFIC IMMUNOTHERAPY

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INTRODUCTION. Traditionally extracts containing both allergenic and non-allergenic molecules are used to diagnose pollen allergy. According to their importance for the development of allergic reactions, allergenic molecules are divided into major and minor. The major molecule is the primary sensitizing molecule responsible for the onset of clinical symptoms.

MATERIALS AND METHODS. The study included 23 patients diagnosed with allergic rhinitis. All patients underwent prick tests with allergens of birch pollen, timothy grass, and wormwood. With a positive prick test with birch pollen, specific IgE to rBet v 1 was determined, with timothy pollen - to rPhl p 1 and rPhl p 5, with wormwood pollen -to nArt v 1. After the allergenspecific immunotherapy(ASIT) course, specific IgE to the same pollen molecules. All 23 observed patients had a good ASIT result.

RESULTS. Before the ASIT course, the indices of specific IgE to major pollen molecules ranged from 1,29 to 92,0 kUA/l (average 27,64 kUA/l), after - from 0,39 to 76,5 kUA/l (25, 37kUA/l). In one patient, the level of specific IgE did not change (31,3 – 31,3 kUA/l), in 6 patients it increased by 9,12% – 203,35%.

Before immunotherapy with tree pollen (5 patients) – specific IgE to rBet v1 – from 1,29 to 92,0 kUA/l (50,80 kUA/l), after – from 0,39 to 73,60 kUA/l (36,64kUA/l). Specific IgE to rPhl p1 and rPhl p5 before ASIT with grass pollen (14 patients) – from 2,11 to 70,10 kUA/l (23,90 kUA/l), after – from 1,90 to 76,5 kUA/l (24,79kUA/l). Before ASIT with wormwood pollen (4 patients) specific IgE to nArt v1 – from 1,57 to 31,3 kUA/l (11,81 kUA/l), after treatment – from 0,53 to 31,3 kUA/l (13,28kUA/l).

Specific IgE before the first course of ASIT (14 patients) was from 2,25 to 92,0kUA/l (26,72kUA/l), after – from 2,11 to 73,6kUA/l (23,96kUA/l). Second course of ASIT (8 patients): before treatment – from 1,29 to 73,60 kUA/l (29,80 kUA/l), after – from 0,39 to 76,50 kUA/l (28,13 kUA/l). In 1 patient who received the third course of ASIT, before treatment – 23,40kUA/l, after – 22,90kUA/l.

CONCLUSION. A decrease in the level of specific IgE to major pollen allergen molecules (rBet v1, rPhl p1 and rPhl p5, nArt v1) after allergen-specific immunotherapy with causally significant pollen allergens is not a reliable indicator of the effectiveness of this type of treatment.

THE ROLE OF NON-ALLERGIC MECHANISMS IN THE PATHOGENESIS OF BRONCHIAL ASTHMA IN CHILDREN

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Exogenous and endogenous factors play a significant role in the pathogenesis of bronchial asthma (BA). Special attention has recently been paid to the study of non-inflammatory mechanisms underlying in the disease. It is established that growth factors play a significant role in the processes of maintaining inflammation and remodeling of the respiratory tract. Thus, vascular endothelial growth factor (VEGFA) activates the processes of neoangiogenesis, as well as the expression of nitric oxide and other cytokines that promote vasodilation and increase of vascular permeability in the bronchopulmonary system, and transforming growth factor (TGF β1) plays a key role in the regulation of proliferation, differentiation and remodeling of extracellular matrix. We attempt to assess the role of these factors in the pathogenesis of bronchial asthma in this paper.

MATERIAL AND METHODS. To achieve this goal, 60 patients with BA and 122 children of control group were examined. Determination of the level of VEGF A and TGF β in the blood serum of patients was carried out by ELISA using sets of Human TGF beta 1 Platinum ELISA and Human VEGF-a Platinum ELISA (Austria). The study of polymorphic loci of Arg25Pro of TGF β1 and C634G of VEGFA gene was performed by allele-specific polymerase chain reaction using SNP-Express reagent kits.

RESULTS. The study found that children with BA significantly increased the concentration of TGFβ1 and VEGFA in serum, compared with the control group. The direct correlation between the severity of the disease and the level of VEGFA in the blood serum of patients. Genetic analysis showed the association between polymorphisms of the gene Arg25Pro TGFβ1 and C634G VEGFA gene with an increased risk of developing the disease. It was found that the Arg/Arg genotypes of TGF-β1 and C/G of VEGFA gene were associated with an increased risk of BA development in children. It is important to note that the carriers of these genotypes have an increase in the content of the studied growth factors in the blood serum. Therefore, it can be assumed that in children who are homozygotes for the Arg-allele of the TGF-β1 gene and heterozygotes for the polymorphism C634G of the VEGFA gene, the processes of bronchial remodeling and, consequently, a more severe course of bronchial asthma will be more pronounced.

CONCLUSION. The data obtained indicate a significant role of growth factors in the pathogenesis of bronchial asthma in children.

SERUM 25(OH) VITAMIN D AND TOTAL SERUM IMMUNOGLOBULIN E LEVELS IN PITYRIASIS ALBA AND ATOPIC DERMATITIS IN CHILDREN

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INTRODUCTION: Pityriasis alba (PA) is a common, benign skin disorder occurring predominantly in children and adolescents. The aim of the study is to assess the serum level of vitamin D (VD) and total immunoglobulin E (IgE) in PA patients.

MATERIALS AND METHODS: Study participants included 30 children with PA, 35 children with atopic dermatitis (AD) and 60 healthy individuals. Blood samples were collected into HumaTube Serum Gel–C/A during summer. Plasma levels of 25(OH) VD (DIAsource kit, Belgium) and total serum IgE (HUMAN kit, Germany) were determined using ELISA technique. Data analysis was performed with the program Origin 6.1.

RESULTS AND DISCUSSION: Total IgE level <50 IU/ml occurred in control individuals (81.6±5.0%) more than six times frequently than in PA patients (13.3±6.2%) ($P<0.0001$) and four times more frequently than in AD patients (17.1±6.3%). Frequency of total IgE level within 51-100 IU/ml in PA patients (16.6±6.8%) and AD patients (25.7±7.3%) was not significantly differed from control individuals (13.4±4.4%) ($P>0.05$). Total IgE level within 101-300 IU/ml occurred 7.3 and 11 times more frequently in PA patients (36.7±8.8%) and AD patients (57.1±8.3%) than in control individuals (5±2.8%). In PA patients the level within 301-600 IU/ml and higher than 601 IU/ml was detected in 6.7±4.5% and 26.7±8.0%, respectively. In sum the mean level of total IgE in PA patients (284.0 IU/ml) and AD patients (219.0 IU/ml) was significantly differed from control individuals (37.4 IU/ml) ($P<0.0001$). VD deficiency was two times higher in PA patients than in control individuals: 10.0±5.4% and 5.0±2.8%, respectively. VD insufficiency was high in PA patients, AD patients and the control group: 83.3±6.8%, 77.1±7.1% and 66.7±6.0%, respectively, but they did not significantly differ. VD sufficiency in PA patients (6.7±4.6%) wasn't significantly different from AD patients (22.9±7.1%) and the control group (33.3±6.0%).

CONCLUSION: Elevated level of total IgE and VD insufficiency in both PA and AD patients indicates the role of these factors in the pathogenesis of PA. Detection and correction of serum levels of total IgE (identification of inducing factors) and VD are recommended.

EFFECTIVENESS OF ALLERGEN-SPECIFIC IMMUNOTHERAPY WITH HOUSE DUST MITES ALLERGEN IN ATOPIC DERMATITIS PATIENTS BASED ON MOLECULAR SENSITIZATION PROFILE

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BACKGROUND. Atopic dermatitis (AD) is an inflammatory, pruritic, chronic skin disease occurring often in families with other atopic diseases (bronchial asthma and/or allergic rhinoconjunctivitis). An effective method of IgE-mediated allergic diseases treating is allergen-specific immunotherapy (ASIT), which affects all pathogenetically significant links of the allergic process. Currently, there is conflicting evidence regarding ASIT in AD, with recent literature being more in favour of it. ASIT may have positive effects in selected, highly sensitized AD patients.

AIM. To investigate the ASIT with house dust mite (HDM) allergens efficacy in AD patients, considering the results of molecular allergy diagnosis.

MATERIALS AND METHODS. 32 AD patients (20 children, 12 adults) were included in the prospective comparative open study. Molecular allergodiagnostics was performed using ISAC test to quantify allergen-specific IgE (asIgE) against 112 allergen molecules (ImmunoCAP ISAC (Thermofisher, Phadia, Uppsala, Sweden). Patients were divided into two groups: group 1 – with the asIgE to the major allergens of D. farinae and/or D. pteronyssinus Der p 1 (p 2) and/or Der f 1 (f 2), group 2 – without this sensitization. 3 consecutive courses (yearly) of subcutaneous ASIT with increasing doses of HDM allergens (produced by Biomed (Russia)) were carried out. To assess the severity of the disease, the SCORAD indices, the Investigator's Global Assessment (IGA), and the dermatological quality of life index (DLQI) were used.

RESULTS. D. farinae and/or D. pteronyssinus Der p 1 (f 1) and/or Der p 2 (f 2) sensitized patients more often achieved a significant improvement of AD symptoms according to the SCORAD index (OR 3.929, 95% CI: 0.879; 17.56), as well as they more often achieved IGA values of 1 or 0 after three courses of ASIT (OR 3.556, CI 95% 0.730–17.324). The median and interquartile range of the DLQI index (points) before treatment in group 1 was 17 [14; 20], in group 2 – 14 [12; 18], after the 3rd course of ASIT: 6 [2; 10] and 8 [3; 10] in groups 1 and 2, respectively. Adverse events were rare, their frequency did not significantly differ in both groups.

CONCLUSION. ASIT with HDM allergens is an effective and safe method of treatment of AD patients. Molecular profile of sensitization to HDM allergens components determination allows justifying the indications and predicting the effectiveness of ASIT.

THE ROLE OF DELAYED-TYPE HYPERSENSITIVITY IN ALLERGIC PATIENTS WITH BIRCH POLLEN SENSITIZATION, REVEALED BY ATOPY PATCH TESTING WITH RBET V 1 AND HYPOALLERGENIC RBET V 1 FRAGMENTS

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BACKGROUND. Immunopathogenesis of allergic disease suggests different types of immune responses, such as IgE-dependent and delayed-type hypersensitivity (cell-mediated). Most diagnostic methods of birch pollen sensitization are directed to detect IgE-dependent mechanisms, excluding cell-mediated type hypersensitivity. It is known that the atopy patch test (APT) with birch pollen allergens can help to detect cell-mediated reaction in birch sensitized patients. However, the question of the advisability of its application still remains unresolved.

AIM. To investigate the features of cell-mediated mechanism in patients with birch pollen allergy, atopic dermatitis (AD) and with or without asthma, allergic rhinoconjunctivitis (ARC) by APT with recombinant birch pollen allergen Bet v 1 and recombinant hypoallergenic T-cell epitope-containing Bet v 1 fragments.

MATERIALS AND METHODS. A clinical study was conducted in 20 patients aged 18 to 50 years [Me=25; Q1=22,25; Q3=32,75] with birch pollen allergy, AD and with or without asthma, ARC. All patients had clinical history of birch pollen allergy, mild AD (14/20), moderate AD (6/20), mild persistent asthma (4/20), moderate ARC (10/20). Specific IgE to rBet v 1 was measured by ImmunoCAP system (Phadia); APTs were performed with rBet v 1 and hypoallergenic rBet v 1 fragments. The results of APT reactions were estimated using European Task Force of Atopic Dermatitis scale. Clinical severity of ARC, asthma and AD was estimated by total nasal symptoms score (TNSS); results of forced expiratory volume in one second (FEV1) and SCORAD in 2 time points (before birch pollen season and during birch pollen season).

RESULTS. In first time point (before birch season) patients didn't have ARC and asthma symptoms (TNSS, Me [Q1;Q3] = 0,5 [0; 1]; FEV1,%, Me [Q1;Q3] = 84,5 [82,5; 87]). All patients had mild to moderate AD (SCORAD, Me [Q1;Q3] = 17,5 [15,25; 21,25]). rBet v 1 and hypoallergenic rBet v 1 fragments induced APT reactions in 20% patients with birch pollen allergy and clinical symptoms of ARC, asthma and AD. In second time point (during birch pollen season), 4 patients with birch pollen allergy had worsening of ARC, asthma and AD: average TNSS was 9 points; average FEV1 decreased until 75% of due values; average SCORAD index was 27 points.

CONCLUSION. It was shown that delayed-type of hypersensitivity plays role in exacerbations of ARC, asthma and AD during the birch pollen season in some sensitized patients.

ANALYSIS OF POLLEN COMPOSITION AND CONNECTION WITH SENSITIZATION OF RESIDENT OF TASHKENT CITY

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For aerobic monitoring on the territory of the city of Tashkent in 2 geographically remote areas from each other (taking into account the wind rose) dust collectors were installed. During aerobiological seasonal monitoring of pollen of allergenic plants in the Tashkent city zone, it was found that the number of pollen and its species diversity is dependent on geographic conditions, for example, in Mirzo Ulugbek district in January pollen representatives prevailed cypress, plane, pine, and in Olmazor instead of pine dominated by poplar pollen. In February, the amount of pollen of cypress increases sharply (45-60 times). The amount of pollen of poplar, elm and ash in Mirzo Ulugbek district also increases significantly (15, 32, and 50 times, respectively), but their number compared to cypress trees was 4-4.5 times less. In the Olmazor district, the amount of pollen was significantly less (no more than 250 particles in that volume), the number of pollen of poplar, willow and plane tree increased, but not so noticeably - no more than 9 times for willow, 4.5 times for poplar and all 1.8 times for plane trees.

When analyzing the sensitization level of patients suffering from exacerbation of allergic reactions in the spring, it was found that sensitization to cypress allergens (Cup a1 and Cup s) was detected in 30.25% of cases. Among the sensitization to cypresses, sensitivity to allergens of the Cupressus arizonica species (Cypress Arizona, Cup a1 allergen) prevailed - only 117, of which 47 were women (39.8%). Sensitivity to both representatives was revealed in 12 patients, of which 25% were women (3 patients), and sensitization only to Cupressus sempervirens (Cypress evergreen, Cup s allergen) was detected in only 2 patients. It should be noted that, given the high content of poplar pollen in the air, among the examined patients there was no true sensitization to the pollen molecules of this plant. On the other hand, despite the low content (in comparison with cypresses) of the amount of pollen in the air, for birch and beech there is a high allergensensitivity to the molecules of these plants among residents of the city of Tashkent with a diagnosed allergy - 20% and 17%, respectively.

The data obtained must be taken into account when planning measures for the improvement and gardening of cities, including Tashkent.

STATURE-WEIGHT DELAY IN CYTOMEGALOVIRUS INFECTION, ASSOCIATED WITH IMMUNOLOGICAL DISORDERS. (CLINICAL CASE)

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GENERALITIES. Malnutrition in 40-45% is the main cause of deaths in children under 5 years, being favored by the pathological evolution of pregnancies, prematurity, pathological jaundice of the newborn baby, infections, celiac disease.

THE OBJECTIVE. Report of a clinical case of immunological disorders in the child with stature-weight retardation and cytomegalovirus infection.

MATERIALS AND METHODS. We present the participation of CMV infection, persistent evolution, in the installation of the stature-weight delay. A girl of 26 months old born from the first pregnancy, at 36 weeks, weight - 2600 g, length - 45 cm. In the neonatal period - rolling bilirubinemia, starting with the second month, repeated hospitalizations in the pediatric, pneumology, gastroenterology and hematology sections. A frequently ill child complained of cough, difficult breathing, sub febrile temperature, malaise at hospital admission. Referral diagnosis: Acute bilateral pneumonia. Malnutrition 3rd degree

RESULTS. CBC: red blood cells -4.11.10 ^ 12, hemoglobin-101g / l, HCT-31.2%, leukocytes-8.710 ^ 3µl, monocytes-0.82 10 ^ 9 / l, ESR -29mm / hour Thoracic Cavity X-ray showed - bilateral basal pneumonia. CMV DNA in urine - 87178 children / ml, dynamically - 128000 children / ml. Weight index- <0.6, nutritional index - <0.7, weight-stature ratio-111gr / l (N-120-130), bone age (fist x-ray) corresponds to 18-20 months. Cellular immune status: Immune-regulator index (IRI) -0.9, (N-1.0-2). Humoral immune status: IgG-6.32 (N-8.8-15.4). Molecular diagnosis - reaction TREC-880544.5027 in 10 white blood cells, KREC - 1051834735 in 10 leucocytes

Conclusions -increased level of excision condition, proliferation of T and B lymphocytes.

Clinical diagnosis: Acute bilateral, basal bronchopneumonia. Iron deficiency anemia 1st degree. CMV infection persistent evolution. Stature-weight delay. Secondary immunodeficiency.

Treatment: antibiotic therapy, hydric and alimentary regimen.

CONCLUSIONS:

1. CMV infection persistent evolution favors stature-weight delay installation.
2. Nutritional disorders and infection leads to an immunological disorder.

CLINICAL AND MORPHOLOGICAL L FEATURES OF OUT-OF-SOCIAL PNEUMONIA IN CHILDREN

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BACKGROUND. In recent years, there has been a tendency towards an increase in the incidence of pneumonia in our country, and a significant increase in this pathology has been noted in children. The study of the clinical and morphological features of community-acquired pneumonia in children in modern conditions is relevant.

AIM. To reveal the clinical and morphological features of pneumonia in children in modern conditions.

MATERIALS AND METHODS. A retrospective analysis of 176 case histories of children diagnosed with community-acquired pneumonia (CAP) was carried out. The age of patients is from 6 months to 18 years. Girls - 91 patients (51.7%), boys - 85 (48.3%).

RESULTS. When analyzing the age of CAP development, it was found that the largest number of cases was at the age of 1 to 3 years - 40.3% of cases (n = 71), children under 1 year - 12.0% (n = 21), 3 -7 years old - 22.2% (n = 39), 8-12 years old - 15.3% (n = 27) and 13-18 years old - 10.2% (n = 18). Right lung involvement was detected in 95 children (54%), left - in 58 (33%), bilateral - in 23 children (13%). In 35 patients (20%) the lobe was affected, in 31 (18%) - focal pneumonia, in 104 (59%) - segmental (segments S8 and S9) and in 6 (3%) - polysegmental. In the majority of children, 127 (72%) CAP was detected for the first time, repeated cases of CAP - 40 children (23%), more than 2 episodes - in 9 children (5%). 167 children (95%) had a moderate severity of CAP, severe CAP - 5% (n = 9). When analyzing clinical manifestations, it was found that fever was observed in 130 people (74%), the majority (62%) had febrile fever; subfebrile - 38% of cases and in 14% the temperature rise to 39-40.9 degrees Celsius. Catarrhal syndrome were expressed in 147 children (84%). Cough was presented in 135 people (77%), among them: dry cough - 21%; wet cough - 75%, barking cough - 4%. On auscultation of the lungs, wheezing was noted in 57% of cases (n = 100): dry wheezing - 37%; wet - 60% and wired - 3%. Dyspnea of mixed genesis was noted in 14% (24 people).

The peculiarities of community-acquired pneumonia in modern conditions is the predominant age of the disease from 1 year to 3 years, the right lung is more often affected, the lesion is often segmental (S8, S9), every fifth patient has pneumonia again, and every twentieth has more than 2episodes. In 95% of cases, pneumonia has a moderate course.

THE PREVALENCE OF SENSITIZATION TO ALLERGENS OF WEEDS IN THE SAMARA REGION

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Ragweed and wormwood play a crucial role in the development of pollinosis caused by weeds. Ragweed is most often referred to as Ambrosia artemisiifolia (Amb. a1). There are areas where Ambrosia trifida is widespread.

OBJECTIVE: to study the prevalence of sensitization to allergens of Ambrosia artemisiifolia, Ambrosia trifida and Artemisia vulgaris in the Samara region

MATERIALS AND METHODS: clinical and allergological diagnostics of patients with symptoms of pollinosis was performed, including skin prick-tests with the allergen Ambrosia artemisiifolia and Artemisia vulgaris, and some patients were analyzed for sIgE to the main allergic components of ragweed (Amb a 1, Amb. trifida) and Artemisia (Art v 1) (ImmunoCap, ISAC, Sweden).

RESULTS: in the structure of sensitization in the Samara region, according to the results of skin prick-tests, sensitization to plant pollen prevails and is more than 50% (p = 0,00001). Of all the skin prick-tests performed with pollen allergens, the most often positive prick tests with weeds are 49,2% (p=0,0001). The share of positive skin tests with allergens of Ambrosia and Artemisia together is almost 38% of all weeds.

According to the results of skin testing, sensitization to Ambrosia is 5,9%, the proportion of sensitization to Artemisia is 32,7%, and co-sensitization is 61,4% (p=0,00001).

When co-sensitization to wormwood and ragweed (according to the results of CP), combined sensitization to was diagnosed in 63,7% of cases: the combination of simultaneously sIgE-at to two types of ragweed and Artemisia was determined with the same frequency (nAmb a 1 + nArt v 1 + Amb. trif.) and Ambrosia trifida and Artemisia (Amb. trif. +nArt v1) – 30,3% and 33,4% (p=0,97)

In patients with clinical manifestations of pollinosis and negative skin prick-tests with the Ambrosia allergen, positive sIgE simultaneously to nAmb a1 and Amb trif. they were determined in 20% of cases, and in almost 50% - only sIgE for Amb trif.

In the Samara region, it is widely distributed as a combined sensitization to wormwood and ragweed, as well as mono-sensitization to Artemisia, Ambrosia artemisiifolia and Ambrosia trifida. Further research is needed to study sensitization in the regions.