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Adherence of doctors to clinical recommendations in the management of children and adolescents with allergic rhinitis

RAR — научная статья

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Introduction. The Russian Federation has adopted international and national conciliatory documents and clinical guidelines covering the diagnosis and treatment of allergic rhinitis (AR). The extent to which doctors adhere to the guidelines remains unclear.
Methods: online survey of allergists (32.7%), pediatricians (54.4%) and others (total n = 364) in 2023–2024.
Results: Most specialists (81.6%) adhere to Russian official clinical recommendation, while about 4% of respondents adhere to international guidelines. A significant part of doctors actively uses the term "seasonal/perennial" AR (75.3%), less often the indication of the severity and course of the disease is used. Pediatricians don't use the classification more often than allergists. To determine the severity of the visual analog scale is used only in 23.0% of cases.
Among laboratory diagnostic methods, allergists are more likely to prescribe a specific examination than pediatricians (87.8% vs. 56.8%). Only 53.8% of respondents consider it mandatory to conduct an allergological examination for patients with AR.
57.4% of respondents believe that the amount of initial therapy depends on the severity of the disease. The most popular drugs for starting therapy are intranasal steroids (40.2%), antihistamines (23.5%), montelukast 4.0%, and intranasal antihistamines 4,8%.
If it is necessary to use concomitant therapy 56.4% of doctors choose a fixed combination of intranasal steroid + antihistamines as a first-line therapy, and an additional 20.9% consider this option in rare cases.
In severe cases, 16.9% of doctors prescribe oral steroids, 20.4% choose the parenteral route of corticosteroid administration, and 33.6% of respondents do not prescribe systemic corticosteroids. The majority of doctors surveyed are aware of the immunobiological therapy of AR — 73.0%, and 26.7% actively support the appointment of biological therapy for AR. Allergen-specific therapy is recommended to be considered by 61.9% of the surveyed doctors.
Conclusion: The study shows the need to train physicians facing AR problems in accordance with current clinical guidelines and international practice.

Keywords: allergic rhinitis, children, adolescents, doctors

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Оригинальная статья / Original article

Исследование приверженности врачей клиническим рекомендациям при ведении детей и подростков с аллергическим ринитом

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Введение. В РФ приняты международные и национальные согласительные документы и клинические рекомендации, в которых освещаются вопросы диагностики и лечения аллергического ринита (АР). Степень приверженности врачей гайдлайнам остается неясной.

Методы: онлайн-опрос врачей аллергологов (32,7%), педиатров (54,4%) и других специальностей (всего n = 364) в 2023–2024 годах.

Результаты. Большая часть специалистов (81,6%) придерживаются российских официальных документов, а международных гайдлайнов — около 4% опрошенных. Значительная часть врачей активно используют терминологию «сезонный/круглогодичный» АР (75,3%), реже используется указание степени тяжести и течения заболевания. Педиатры не пользуются классификацией чаще. Для определения степени тяжести визуальная аналоговая шкала используется только в 23,0% случаев.

Среди лабораторных методов диагностики аллергологи чаще назначают специфическое обследование, чем педиатры (87,8% vs 56,8%). Только 53,8% респондентов считают обязательным проведение аллергологического обследования пациентов.

57,4% опрошенных считают, что объем стартовой терапии зависит от степени тяжести заболевания. Наиболее популярными препаратами для стартовой терапии являются интраназальные стероиды (иГКС) (40,2%), антигистаминные препараты (АГ) (23,5%), монтелукаст 4,0%, интраназальные АГ 4,8%.

При необходимости использования сочетанной терапии 56,4% врачей выбирают фиксированную комбинацию иГКС + инАГ в качестве терапии первой линии, дополнительно 20,9% рассматривают этот вариант в редких случаях.

В тяжелых случаях 16,9% врачей назначают пероральные глюкокортикостероиды, 20,4% — выбирают парентеральный путь введения ГКС, 33,6% респондентов не назначают системные ГКС. Об иммунобиологической терапии АР осведомлее на большая часть опрошенных врачей — 73,0%, причем 26,7% активно поддерживают назначение биологической терапии при АР. Аллерген-специфическую терапию рекомендуют рассмотреть 61,9% опрошенных врачей.

Заключение: исследование показывает необходимость обучения врачей, сталкивающихся с проблемами АР, в соответствии с действующими клиническими рекомендациями и международной практикой.

Ключевые слова: аллергический ринит, дети, подростки, врачи

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Allergic rhinitis (AR) is a common problem in childhood and adolescence and negatively affects physical, social and psychological well-being [1]. AR affects about 40% of the world population, 23-30% of the European population and 12-30% of the US population [2]. According to the results of the large-scale "International Study of Asthma and Allergies in Childhood" (ISAAC), the prevalence of AR in different countries of the world varies from 0.8 to 14.9% among children 6-7 years old, from 1.4 to 39.7% among chil-

dren 13-14 years old [3]. Based on the data of research centers in Russia that participated in the study of AR prevalence under the international ISAAC program, the prevalence of AR in the Tomsk region among children aged 7-8 years old — 21,9%, among children 13-14 years old — 34.2% [4], in Stavropol Krai — 24.0% among children 7-8 years old and 41.1% among children 13-14 years old [5], in Krasnodar Krai — 25.4% among children 7-8 years old and 40.3% among children 13-14 years old [6], in Agin Buryat Autonomous Okrug — 10.2% among children 12-14 years old [7]. High prevalence of AR is also demonstrated by studies conducted among preschool children. Thus, according to Kong et al. data, the prevalence of AR among urban children 3-6 years old was 10.8% [8]. The results of Chinese colleagues are similar to the data of domestic researchers — the prevalence of AR among 3-6 years old children in Altai Krai was 10.6% [9], in Volgograd — 14.1% [10], the prevalence of AR symptoms among 3- year old children in Moscow — 5.2%, among 4 -year old children — 7.4% [11].

Currently, international and national consensus documents and clinical guidelines have been adopted, which cover the issues of AR diagnosis and treatment. In 2001, the WHO working group experts adopted the Allergic Rhinitis and its Impact on Asthma (ARIA) program, and in 2020 the fourth updated edition — Next-generation Allergic Rhinitis and Its Impact on Asthma (ARIA) guidelines for allergic rhinitis based on Grading of Recommendations Assessment, Development and Evaluation (GRADE) and real-world evidence was published [12]. In 2013, the European Academy of Allergology and Clinical Immunology adopted the position paper Paediatric rhinitis [13]. In Russia, the third version of the scientific and practical program "RADAR. Allergic rhinitis in children" was published [14], and the Ministry of Health approved the clinical guidelines (CG) "Allergic rhinitis" developed by the Russian Association of Allergists and Clinical Immunologists, the National Medical Association of Otorhinolaryngologists, and the Union of Pediatricians of Russia.

According to the current legislation of the Russian Federation, medical care should be provided on the basis of CGs, as well as consider the standards drawn up on the basis of the CG provisions, including the prescription of drugs registered in Russia in accordance with the official instructions for their use. This is rational, as it is the CGs that reflect the currently known methods of diagnosis, treatment, prevention and rehabilitation of patients with certain nosologies, as well as the significance of these methods using evidence-based medicine data. To date, it has been confirmed that physicians' adherence to CGs reduces the likelihood of medical errors, improves the quality of prescribed treatment, and positively affects patients' adherence to therapy and their satisfaction with treatment [15]. However, in real clinical practice, physicians do not always follow the current CGs and have their own preferences when choosing methods of diagnosis and treatment of patients [16].

STUDY OBJECTIVE: to study diagnostic and therapeutic approaches of physicians from different regions of the country in managing children and adolescents with AR.

MATERIALS AND METHODS

We conducted a prospective cross-sectional study with questionnaires to physicians in different regions of the country about the tactics of managing children and adolescents with AR. The survey was conducted using a questionnaire developed by the Association of Pediatric Allergists and Immunologists of Russia (ADAIR), which was posted on the open Internet resources of the Association (ADAIR website: https://adair.ru/). All interested physicians could take part in the survey; no certificate was required. The survey was conducted between June 2023 and July 2024. Physicians from various specialties participated in the survey, but the majority of polled physicians were pediatricians and allergists.

The questionnaire included 43 questions, which were organized into 5 sections.

Section 1 contained general questions (region, length of service, type of treatment and prevention institution, specialty).

Section 2 — questions about CGs and consensus documents used in actual practice for managing children and adolescents with AR.

Section 3 — diagnosis formulation questions.

Section 4 — questions devoted to the diagnosis of AR in children and adolescents (terms of diagnosis, preferred laboratory and instrumental diagnostic methods, allergological examination, consultations with specialists).

Section 5 — questions on AR therapy in children and adolescents.

The full version of the questionnaire is presented in Appendix 1.

Table 1. **Characteristics of physician respondents included in the survey (author's table)**
Таблица 1. **Характеристика врачей-респондентов, принявших участие в опросе (таблица автора)**

Features		*abs (%)*
Specialty	Allergist-immunologist	119 (32,7)
	Primary care pediatrician	198 (54,4)
	Otolaryngologist	20 (5,5)
	Other	23 (6,4)
	Total	364 (100,0)
Type of treatment facility	Outpatient	305 (83,8)
	Stationary	59 (16,2)
	Total	364 (100,0)
Form of ownership of the institution	State	267 (73,4)
	Private	97 (26,6)
	Total	364 (100,0)
Population of the settlement	Over 500,000 population	198 (54,4)
	150–500 k.	62 (17,0)
	Less 150 thousand	104 (28,6)
	Total	*364 (100,0)*

LEC: the study is non-interventional; ethics committee approval is not required. Respondents gave their consent to the processing of personal data.

STATISTICAL ANALYSIS

Statistical analysis procedures were performed using JASP 0.19.2 statistical packages. Pearson's chi-square test was used to compare the frequencies of qualitative features. The data are given in the form of relative frequencies.

RESULTS AND DISCUSSION

Characteristics of study participants

A total of 364 physicians of various specialties from different regions of the country took part in the survey. Among the respondents, pediatricians — primary care pediatricians — 54.4% and allergologists-immunologists — 32.7% prevailed, while otorhinolaryngologists accounted for only 5.5% of respondents. More than half of the respondents — 54.4% live in large megacities with a population of more than 500 thousand people, 17.0% — in cities with a population of 150,000 to 500,000, 28.6% — in small towns with a population of less than 150,000. Primary care physicians prevailed among the respondents (83.8%), with more than half of all respondents working in public institutions (73.4%). 26.6% of respondents work in hospitals. Thus, the cohort of physicians is represented mainly by allergologists-immunologists and pediatricians working mainly in outpatient and polyclinic medical institutions of large cities with a population of more than 500 thousand. The average work experience of the respondents amounted to 19 years. The characteristics of the study participants are presented in Table 1.

Physicians' awareness of clinical guidelines and consensus documents related to AR

Of particular interest is the result of a survey of physicians on awareness and use in real clinical prac-

Table 2. **Frequency of respondents' use of clinical guidelines on allergic rhinitis (author's table)**
Таблица 2. **Частота применения респондентами клинических рекомендаций по АР (таблица автора)**

Document title	%	Note
Clinical guidelines «Allergic rhinitis»	59,6	Approved by the Scientific and Practical Council of the Ministry of Health of the Russian Federation in 2020; developers: Russian Association of Allergists and Clinical Immunologists, National Medical Association of Otorhinolaryngologists, Union of Pediatricians of Russia (expired in 2024)
Federal Clinical Recommendations for the provision of medical care to children with allergic rhinitis	22,0	Approved by the Scientific and Practical Council of the Ministry of Health of the Russian Federation Year 2015; developers: Russian Association of Allergists and Clinical Immunologists, Union of Pediatricians of Russia (lost in 2020)
Scientific and practical program «Radar. Allergic rhinitis in children. Recommendations and algorithm in pediatric allergic rhinitis»	17,6	Edition Fourth, revised and supplemented, 2023, edited by V. A. Revyakina, N. A. Daiches, N. A. Geppe
Clinical guidelines «Allergic rhinitis»	13,5	Developers: Russian Society of Rhinologists, edited by A.S. Lopatin and V.V. Shilenkova. Shilenkova. approval year 2022
«Next-generation Allergic Rhinitis and Its Impact on Asthma (ARIA) guidelines for allergic rhinitis based on Grading of Recommendations Assessment, Development and Evaluation (GRADE) and real-world evidence»	6,0	Year of approval 2020
ICAR-Allergic Rhinitis 2023	2,5	Year of approval 2023

tice of CGs, scientific and practical programs and consensus documents when working with patients suffering from AR.

The survey showed that the majority of surveyed physicians are familiar with several documents regulating the work with patients suffering from AR. A significant part of respondents noted the CG "Allergic rhinitis" approved in 2020 and 2015 by the Ministry of Health of the Russian Federation — 75,5% and 55,2% respectively. The scientific and practical program "Radar. Allergic rhinitis in children. Recommendations and algorithm for pediatric allergic rhinitis" was known to 37.4% of respondents. Only 15% of respondents were familiarized with international recommendations and consensus documents on AR.

When asked "Which CGs do you use in your practice?", the majority of respondents (59.6%) pointed to the CG "Allergic rhinitis" approved in 2020. Another

22% use an older version of the 2015 CGs, which together account for 81.6% of physicians adhering to official documents. International recommendations and concordance documents are used in real practice on average by about 4% of respondents. It is noteworthy that 5.5% of the respondents do not take into account the existing CGs and rely on their personal clinical experience when managing AR patients.

Diagnostic formulation in real clinical practice

AR is a disease characterized by IgE-mediated inflammation of the nasal mucosa and the presence of at least two of the following symptoms that occur daily for an hour or more: nasal congestion (obstruction), nasal discharge (rhinorrhea), sneezing, itching in the nasal cavity. Allergic rhinitis is classified into "seasonal" and "year-round", intermittent (symptoms occur less than 4 days a week or less than 4 weeks a year) and persistent (symptoms occur more than 4 days a week or more than 4 weeks a year), and mild, moderate, and severe, according to MH CG 261 "Allergic Rhinitis".

According to the survey, 75.3% of respondents find it useful to distinguish seasonal and year-round AR when formulating a diagnosis, while the course (intermittent/persistent) and severity of AR are indicated by only 37.9% and 43% of physicians, respectively.

There is no disagreement among allergists and pediatricians on the issue of "seasonal/year-round" AR. Allergists specify the severity of allergic AR in 77.8% of cases, while pediatricians do so in 28.5% (among pediatricians, 41.4% do not use and 30.1% do not know the criteria of AR severity). The situation is similar with the indication of the course of the disease: 74.1% of respondents-allergologists use the classification "persistent/intermittent", pediatricians use it only in 18.6% of cases (50.1% of pediatricians know the difference but do not use it and 24.1% do not know the criteria).

AR DIAGNOSIS IN ACTUAL CLINICAL PRACTICE

Laboratory methods of examination

The diagnosis of AR is determined on the basis of allergologic anamnesis, characteristic clinical symptoms and the results of specific allergologic examination of the patient. According to the CG MH 261, all patients with symptoms of AR in the period of exacerbation should undergo a general clinical blood test (analysis) to detect increased eosinophil levels and cytologic examination of upper respiratory tract flushes to detect nasal secretion eosinophilia. According to the results of our study, only 40.9% of surveyed physicians consider it necessary to perform a "general blood test" to detect eosinophilia and 50.3% — to perform cytologic examination of upper respiratory tract flushes to detect nasal secretion eosinophilia.

Clinical general therapeutic examination and auscultation to exclude bronchial asthma and other diseases are performed by 85.5% of respondents, the "breathing with closed mouth" test is used by 61.4% of physicians. Visual analog scale is used to diagnose the severity of rhinitis only in 23.0% of cases, and 43.4% of respondents know about the method but do not use it. All mentioned tests are mandatory according to CG 261 "Allergic rhinitis".

To confirm the diagnosis of AR and identify causative allergens, all patients are recommended to undergo allergologic examination, which can be performed by skin testing (skin tests with allergens) or by determining the level of specific IgE in serum. The choice of allergy testing method is determined by the availability and equipment of the allergy room and the presence/absence of contraindications to skin testing. According to our survey, 53.8% of respondents consider allergologic examination mandatory, while the rest of the respondents consider it possible to establish the diagnosis of AR on the basis of the clinical picture of the disease without allergologic examination. Allergologists consider allergological examination to be mandatory only in 74.8% of cases, pediatricians — in 41.7%.

According to the CG, it is not recommended that all patients with AR should undergo a study of the total level of immunoglobulin E in the blood due to the low specificity of this parameter, while 47.3% of respondents prescribe this test in the initial diagnosis of AR. Table 4 presents the frequency of laboratory tests prescribed by physicians of different specialties in diagnosing AR in children and adolescents.

According to the data presented in the table, from the point of view of existing CGs, the most correct approach to diagnosing AR is by allergologists-immunologists, but even allergologists-immunologists prescribe allergologic diagnostics (determination of specific IgE or skin tests) only in 88% of cases, and determination of eosinophils in nasal secretion — in 61% of cases. Only 57% of pediatricians recommend allergological diagnostics necessary to confirm AR.

Table 3. **Frequency of prescription of laboratory methods of research in primary diagnosis of AR by doctors of different specialties (author's table)**
Таблица 3. **Частота назначения лабораторных методов исследования при первичной диагностике АР врачами разных специальностей (таблица автора)**

Specialty	Total IgE		Blood eosinophils		Nasal secretion eosinophils		Specific IgE to allergens or skin tests		Number of respondents
	n	%	n	%	n	%	n	%	
Allergist	28	23,7%	46	37,4%	73	61,8%	105	87,8%	131
Pediatrician	116	58,8%	86	43,7%	99	50,3%	112	56,8%	199
Total (including other specialties)	**157**	**46,6%**	**142**	**40,8%**	**183**	**54,0%**	**226**	**66,7%**	**378**

Instrumental methods of examination

According to CG 261, all patients with suspected AR should undergo anterior rhinoscopy to identify characteristic signs of AR, anatomical features and differential diagnosis with other pathologies. Only 28.0% of pediatricians and allergists-immunologists perform rhinoscopy in patients with AR, the rest either do not consider it necessary, or do not perform it due to lack of skills and tools, or refer to ENT doctors for examination. In case of ineffectiveness of standard therapy, severe and prolonged nasal obstruction, it is recommended to perform endoscopic endonasal revision of the nasal cavity, nasopharynx and paranasal sinuses, computerized tomography of the sinuses for differential diagnosis and identification of other causes of nasal obstruction. According to our survey, 33.2% of respondents recommended endoscopic endonasal revision of the nasal cavity when indicated, and 83.8% of respondents recommended CT scanning.

AR TREATMENT IN REAL CLINICAL PRACTICE

The goal of AR therapy is to achieve complete control of the disease symptoms. The main directions of treating patients with AR are elimination measures, drug therapy and allergen-specific immunotherapy (ASIT).

Elimination measures

All patients with AR are recommended to carry out elimination measures in relation to causative allergens in order to reduce the severity of the disease symptoms (use of special filters, daily wet cleaning, avoiding contact with pets, moving to another climatic zone for the time of flowering of causative allergens, etc.). As elimination measures it is also recommended to use preparations for moisturizing, cleansing and protection of the nasal mucosa — isotonic saline solutions in order to prevent contact of aeroallergens with the nasal mucosa. The vast majority of physicians (86.5%) recommend elimination measures after

Table 4. **First-line drugs for monotherapy according to pediatricians and allergists-immunologists (author's table)**
Таблица 4. **Стартовые препараты для монотерапии по мнению врачей педиатров и аллергологов-иммунологов (таблица автора)**

Drug group	Pediatricians, %	Allergists, %	All respondents*, %
Oral antihistamines	14,5	38,2	23,5
Intranasal antihistamines	7,0	0,8	4,8
Antileukotrienes	7,0	0,8	4,0
Intranasal steroides	39,2	38,9	40,2
Any option other than Intranasal steroides	6,5	0,76	4,6
Any option, including Intranasal steroides	17,9	14,2	15,6

* Including physicians of other specialties.

identification of the causative allergen. Opinions were divided regarding the use of nasal mucosal cleansing preparations and nasal shower prescription: 41.2% of physicians prescribe isotonic solutions during exacerbation, 39.3% of respondents prescribe nasal shower for AR patients even outside exacerbation as an element of daily nasal hygiene.

Drug therapy

Drug therapy of AR is based on a stepwise approach, when the amount of therapy depends on the severity of the disease, and as the severity of the disease changes, it is possible to adjust the amount of therapy.

When asked about the starting therapy of AR, 57.4% of respondents answered that the amount of therapy depends on the severity of the disease, which is in line with existing clinical guidelines, with 19.3% of respondents usually prescribing 2 drugs and 11.7% prescribing one drug. Allergologists are guided by the degree of severity in 71.6%, and pediatricians in 46.2% of cases. Pediatricians are characterized by a more formal approach — about half of these doctors use established treatment regimens.

16.1% of pediatricians and only 4.6% of allergist-immunologists are committed to starting monotherapy, while 24.6% and 15.3% prescribe 2 drugs simultaneously. Despite the fact that mild allergic rhinitis predominates in the disease structure, patients with uncontrollable complaints usually present at the doctor's office, and generally doctors tend to prescribe several drugs according to the severity of the disease.

In case of monotherapy, 40.1% of the respondents choose intranasal corticosteroids as the first-choice drug, 23.6% choose systemic antihistamines, 4.9% choose intranasal antihistamines, and 4.1% choose antileukotriene receptor inhibitors (Table 4).

When analyzing the table, it is noticeable that the most preferable option for doctors is the prescription of intranasal GCS, which have a good efficacy and safety profile. Perhaps the experience of specialists was influenced by the fact that patients who had previously used over-the-counter drugs came to the doctor. However, the unusually low frequency of use of oral antihistamines in the group of pediatricians compared to allergists (14.5% vs 38.2%) attracts attention. In contrast, allergists hardly use intranasal AG and montelukast in starting monotherapy.

Despite active educational efforts and existing CGs, 42.7% of respondents consider sedating antihistamines for use, "as the fastest and strongest drugs", with 5.4% doing so frequently and the remaining 39.7% rarely but using outdated first-generation AHs. Among allergists, 22.9% sometimes use sedating AHs, with 8.0% of pediatricians doing so frequently and 48.7% sometimes. Both generations of antihis-

tamines have similar effects; the claim that the first generation is faster and more active does not stand up to criticism [17].

As a means of emergency therapy on demand and in short courses, CG 261 support the use of decongestants. The questionnaire asked about the frequency of using this group of drugs. Respondents mostly used decongestants occasionally (65.9%), but 17.2% of physicians prescribe the drug to almost all patients. The prescriptions of allergists and pediatricians regarding decongestants differ significantly: 27.1% of pediatricians prescribe vasoconstrictors to almost everyone and 55.3% sometimes; among allergists, 3.1% prescribe often and 81.6% sometimes.

The combination of decongestant and intranasal AH may be more effective than each drug alone. Such medications are used frequently by 20.9% of all physicians, 57.4 use them occasionally.

Cromoglycic acid drugs are prescribed by 59.7% of respondents, of which 13.4% prescribe drugs of this group frequently, and 55.2% — in rare cases.

According to CG 261, oral glucocorticoids are recommended for patients with AR in case of severe exacerbation and (or) ineffectiveness of drugs used in the 3rd stage of therapy. According to the results of our study, 16.9% of surveyed physicians prescribe oral glucocorticosteroids when indicated, 20.4% choose parenteral route of administration of systemic glucocorticosteroids, 33.6% of respondents do not basically prescribe systemic glucocorticosteroids, and 20.3% of physicians do not know about the possibility to use systemic corticosteroids in AR.

Deposited corticosteroids were previously popular for use, now their role is declining. Deposited corticosteroids were previously popular for use, now their role is declining. CG 261 does not recommend the use of depot GCS by injection. Intranasal use of short-acting GCS is also unacceptable. Nevertheless, 13.8% of physicians indicate that they have patients who receive intranasal GCS injections in rare cases (9.9% of allergists and 16.5% of pediatricians), 40.0% are not aware of this possibility, and 38.1% do not generally prescribe intranasal GCS injections.

Similar results were obtained with regard to deposited drugs: 13.8% rarely prescribe deposited GCS, 1.6% do so frequently and 73.8% are against prescribing. Among allergists, 84.7% are strong opponents of depot GCSs and 9.1% prescribe them occasionally. Among pediatricians, 68.8% never prescribe, 15.1% use occasionally and 2% prescribe frequently.

The use of combined drugs for AR therapy is a promising direction. When comparing the efficacy of different variants of AR therapy, it should be noted that, according to ARIA recommendations, combinations of nasal GCS with oral AGPs have no advantages over nasal GCS monotherapy, which is confirmed by the data of meta-analysis of 13 studies [18]. However, fixed combinations of nasal GCS with nasal AGPs are superior in efficacy to the isolated use of topical GCSs.

This conclusion is supported by the current clinical practice guideline CG 261, according to which combination therapy may be considered when combined use of anti-allergic drugs in AR is necessary. Intranasal corticosteroid + intranasal antihistamine and tablet non-sedating systemic antihistamine in combination with a leukotriene receptor antagonist are presented.

To the general question “Do you support starting combination therapy for AR?” 91.6% of allergists and 65.8% of pediatricians responded positively.

According to the results of our study, 56.4% of physicians support the use of combined iGCS + INAH in moderate to severe AR as first-line therapy, with an additional 20.9% considering this combination in rare cases. Among allergists, 66.4% approve

of the use of the combination of IGCS + INAH, and another 24.2% recognize the usefulness of the combination but use it infrequently. Among pediatricians, there is a slightly lower frequency of specialists who strongly endorse starting with the combination agent (53.8%), and another 23.6% rarely use it. Thus, most specialists are aware of the availability of a new group of drugs and actively use it in practice.

At the same time, more than half of physicians (56.4%) prescribe a non-sedative systemic antihistamine in combination with a leukotriene receptor antagonist, 11.4% consider this combination unnecessary, and 24.1% do not know about this possibility. 74.8% of allergists approve of the use, 13% have a negative view of "montelukast + AH" drugs, and 6.1% are unaware of the possibility. Among pediatricians, one-third of physicians are unfamiliar with this type of combination (35.2%) and 45.7% support the existence of the combination drug, while 10.1% are against this type of medication.

In patients with severe persistent AR with ineffectiveness of drugs used in the 3rd step of therapy, according to step therapy, it is recommended to consider prescribing immunobiologic therapy with monoclonal antibody to immunoglobulin E — omalizumab. Most of the surveyed physicians are aware of immunobiologic therapy of AR — 73.0%, and 26.7% actively support the prescription of biological therapy in AR. It should be noted that 12.2% of allergists and 22.1% of pediatricians do not know about the existence of biological therapy for AR treatment.

The questionnaire contained questions about the use in practice of drugs not recommended for use due to insufficient evidence base or side effects, such as sedative systemic antihistamines, depot corticosteroids. About half of the respondents — 43.0% periodically prescribe sedative antihistamines, 15.6% of respondents do not exclude the possibility of prescribing depot corticosteroids parenterally during AR exacerbation.

Allergen-specific immunotherapy (ASIT) is the main method of pathogenetic treatment of IgE-mediated allergic diseases, consisting in the introduction of increasing doses of the allergen responsible for the clinical manifestations of the disease in a given patient [14]. This method of therapy is recommended to be considered for all patients with AR in order to reduce the severity of AR symptoms and reduce the need for drug therapy. According to our survey, 61.9% of physicians surveyed are aware of this method of therapy and recommend considering its prescription, while 12.4% of respondents, despite being aware of ASIT, do not recommend it to patients, and 1.6% of respondents are not familiar with ASIT. Some physicians, 14.8%, recommend ASIT only for seasonal rhinitis, and 1.6% recommend it only for year-round rhinitis. Allergologists naturally recommend ASIT for any AR, while 20.0% of pediatricians do not recommend or are not aware of the treatment methodology.

CONCLUSION AND DISCUSSION

Our study showed a rather high adherence of physicians, especially allergists-immunologists, to the provisions of clinical guidelines in the management of children and adolescents with AR. However, the study demonstrated a number of inconsistencies between the diagnostic and therapeutic approaches of physicians and the provisions of clinical recommendations on AR. These include a high frequency of prescribing for diagnostic purposes general immunoglobulin E, which has low specificity (47.3% of respondents), while ignoring allergologic examination and determination of eosinophils in nasal secretion to confirm AR. Allergological examination by skin testing or determination of specific IgE levels in blood serum is prescribed on average by 67% of physicians, and determination of nasal secretion eosinophils by 54% of physicians. Inconsistencies of therapeutic tactics with existing clinical recommendations include the use of sedative antihistamines (43%), depot corticosteroids (15%) in some groups (pediatricians), low frequency of recommendations for the prescription of ASIT, including due to insufficient awareness of this method of therapy (61%).

It is noteworthy that the choice of AR therapy step is recommended to be made according to the ARIA 2020 algorithm, as interpreted in the clinical guidelines CG 261, using VAS results. Our respondents use VAS only in 23.0% of cases, despite the fact that the method is a recommended tool for assessing the severity of AR symptoms and is described in the appendix to the Federal Clinical Recommendations on Allergic Rhinitis Therapy.

Note that according to the results of the Russian online survey of patients with AR (n = 328) performed in 2021, the respondents were significantly overrepresented among those with moderate-to-severe/severe AR (VAS symptom score ⩾ 5) — 83 vs. 17% with mild AR (VAS score < 5). In the same study by Nenasheva N. M. 2021, 52% of patients reported the severity of the disease as moderate, 26% of respondents reported intense symptoms and impaired daytime activity and sleep, and 5% of respondents had extremely severe disease, i.e. symptoms significantly impaired quality of life [19].

According to the algorithm of therapy prescription for patients with symptom severity on VAS ⩾ 5, combination therapy of intranasal GCS and intranasal AH is recommended [20]. According to a number of studies, fixed combinations (such as mometasone + olopatadine) for nasal administration have demonstrated not only better efficacy compared to monotherapy with topical GCS, but also a rapid onset of action (from 10 min.) [21, 22].

Combinations of intranasal steroids with antihistamines are now available: olopatadine 600 mcg and mometasone furoate 25 mcg (from 6 years of age for seasonal and from 12 for year-round AR); azelastine 137 mcg + fluticasone 50 mcg/dose (from 12 years of age), azelastine 140 mcg + mometasone 50 mcg (from 18 years of age). Combination therapy of fluticasone with azelastine and mometasone furoate with olopatadine demonstrated comparable efficacy [23].

In a comparative study of intranasal AHs, olopatadine has a better tolerability profile than azelastine for adverse events such as bitter taste, nasal burning, and sneezing [24]. As such, patients may have a higher adherence to the olopatadine-containing formulation, which in turn may contribute to better control of disease symptoms through good compliance. The fixed combination of mometasone + olopatadine is the only one authorized in the Russian Federation for use in children from 6 years of age and can be used in pediatric practice for severe pollen allergy symptoms.

New combinations of oral drugs are also emerging. For patients who cannot use nasal forms of drugs, it is reasonable to recommend the combination of the antileukotriene drug montelukast and oral AH. Along with a mono-drug, a fixed combination of montelukast with AH levocetirizine is available in Russia from 15 years of age.

The Association of Pediatric Allergists and Immunologists of Russia supports the prescription of combination therapies based on current clinical guidelines and data from meta-analyses. A meta-analysis of 167 studies, published in 2025, evaluating the efficacy of intranasal medications in AR, including combination therapies, confirmed the high efficacy of combination therapy compared to monotherapy [25]. The use of a spray with a reduced concentration of mometasone (Rialtris spray, Glenmark Pharmaceuticals Ltd, India) is preferable in pediatrics due to the high safety profile of the drug. According to published studies, the combination of mometasone furoate with olopatadine is safe and well tolerated, and the incidence of adverse events is similar to that of placebo or monotherapy, even in the long term [26].

The results of the survey of specialists show the direction of training activities: more attention should be paid to the ways of assessing patients' condition and choosing effective combinations of drugs. It is obvious that monotherapy will be in demand in special

groups of patients: in case of a mild course or when there is a need for increased safety — pregnancy, early age. In other situations, adequate symptom control is achievable with combination therapy. The choice based on symptom severity is the preferred therapeutic option.

The Association supports and provides resources to educate a wide range of physicians facing the problems of allergic rhinitis, using distance technology, lecture and teaching materials to bring the knowledge of specialists in line with current clinical guidelines and international practice.

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THE AUTHORS` CONTRIBUTION TO THE WORK

Sergey S. Masalskiy — development of research design, participation in research, analysis of results, statistical data processing, writing and editing the text of the article.

Natal'ya V. Shakhova — review of publications on the topic of article, writing and editing the text of the manuscript.

Yuri S. Smolkin — development of research design, verification of the critical content of the article.

Aleksandra N. Molochkova — analysis of results, preparation of a draft manuscript, preparation of the article for publication.

ВКЛАД АВТОРОВ В РАБОТУ

Масальский С. С. — разработка дизайна исследования, участие в проведении исследования, анализ результатов, статистическая обработка данных, написание и редактирование текста статьи.

Шахова Н. В. — обзор публикаций по теме статьи, написание и редактирование текста рукописи.

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Молочкова А. Н. — анализ данных, подготовка черновика рукописи, подготовка статьи к публикации.

APPENDIX 1. THE QUESTIONNAIRE USED IN THE STUDY

ПРИЛОЖЕНИЕ 1. ОПРОСНИК, ИСПОЛЬЗУЕМЫЙ В ИССЛЕДОВАНИИ

Section 1. Respondents' characteristics	
Full name, city, work experience, medical and preventive institution, type of institution	
Section 2. Awareness of clinical guidelines	
What clinical guidelines do you know:	Clinical Recommendations of the Ministry of Health of the Russian Federation CG 261 "Allergic Rhinitis" (Russian Association of Allergists and Clinical Immunologists, National Medical Association of Otorinolaryngologists, Union of Pediatricians of Russia) Federal clinical guidelines for medical care of children with allergic rhinitis. Baranov A. A. 2015 (Union of Pediatricians of the Russian Federation) Radar. Allergic rhinitis in children recommendations and algorithm in pediatric allergic rhinitis. Edited by V. A. Revyakina, N. A. Daiches, N. A. Geppe. 2020 Allergic rhinitis: clinical recommendations; ed. by A. S. Lopatin and V. V. Shilenko. V. Shilenko-voy. 2022 Next-generation Allergic Rhinitis and Its Impact on Asthma (ARIA) guidelines for allergic rhinitis based on Grading of Recommendations Assessment, Development and Evaluation (GRADE) and real-world evidence. Bousquet J., et al. 2020 ICAR. International consensus statement on allergy and rhinology: Allergic rhinitis. 2018
What clinical guidelines do you actually adhere to in your work?	
Section 3. Diagnosis formulation	
Do you find it necessary to use the terms "seasonal" and "year-round" rhinitis, are they useful in your work?	
Do you use the definition of rhinitis severity in your work, do you specify it in the diagnosis?	
Do you use the terms "persistent" and "intermittent" rhinitis in your work, are they useful and necessary?	
Section 4. Screening	
Do you think it is necessary to use specific allergy screening in all patients to confirm the diagnosis of allergic rhinitis?	
Who should perform the allergy screening?	
What tests are you sure to perform for initial confirmation of the diagnosis of allergic rhinitis?	
Do you use anterior rhinoscopy (examining the nasal cavity from the front with light from the front through the nostrils) when examining children with a suspected or established diagnosis of AR? (question for non-otolaryngologist physicians)	
Do you perform general physical examination, particularly auscultation, in patients with AR?	
Do you use a visual analog scale of allergic rhinitis symptoms in the majority of your patients?	
Do you assess the patient's condition using the normal "breathing with mouth closed" test?	
Do you think it is necessary to use radiation diagnostic methods (radiography, CT, MRI of the sinuses) for most patients?	
What methods of instrumental diagnostics do you consider necessary in patients with suspected AR?	
Do you prescribe and detail elimination measures for the patient?	
Section 5. Treatment	
Do you recommend elimination therapy in the form of Weber's douches with isotonic or hypertonic saline solutions?	
What starting therapy do you prescribe for allergic rhinitis?	

Starting drug for the treatment of rhinitis in case of monotherapy
Do you prescribe sedative antihistamines?
Do you use parenteral depot corticosteroids?
Do you prescribe systemic corticosteroids exceptionally for severe exacerbations of AR?
Do you prescribe corticosteroids in injections intranasally for AR exacerbations?
How often do you prescribe decongestants?
How often do you prescribe cromoglycic acid drugs?
How often do you prescribe decongestant + antihistamine combination therapy intranasally?
What is your opinion on the starting prescription of combination drugs: antihistamines intranasally + corticosteroids intranasally in one spray?
How do you feel about the starting prescription of combination drugs: antihistamines + leukotriene receptor blockers in one pill?
Do you support the starting prescription of combination therapy for allergic rhinitis, such as moderate allergic rhinitis?
Do you support immunobiologic therapy (monoclonal antibodies) for AR?
Do you consider it necessary to prescribe and recommend allergen-specific immunotherapy in AR?