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Allergic Rhinitis (J Maspero, Section Editor)

ARIA 2017: a Review of Major Changes and Innovations

Hugo E. Neffen, MD[1,*]
Juan Carlos Ivancevich, MD[2,3]

Address
[*,1]Center of Allergy, Immunology and Respiratory Diseases, Santa Fe, Argentina
Email: hugoneffen@gmail.com
[2]Immunology, Faculty of Medicine, del Salvador University, Buenos Aires, Argentina
[3]Allergy & Immunology, Santa Isabel Clinic, Buenos Aires, Argentina

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Abstract

Background Allergic rhinitis is a disease underestimated by patients, and underdiagnosed and thus undertreated by physicians since most of the patients present with symptoms of moderate-to-severe disease, overall diminished quality of life, impairing sleep quality and cognitive function, and a substantial impact on work productivity, school absenteeism, and costs. The relationship between treating physician and patients is crucial in all chronic diseases.
Objectives Review the main changes and innovations of recent years in the ARIA guidelines.
Methods The most recent publications of the ARIA (Allergic Rhinitis and its Impact on Asthma) guidelines were reviewed.
Results ARIA 2016 strengthens the role of patients in the control and treatment of their symptoms by the use of technology, which improves physician-patient communication. The selection of pharmacotherapy for patients with allergic rhinitis (AR) depends on several factors, including age, prominent symptoms, symptom severity, control of AR, patient preferences, and cost. It confirms that inhaled corticosteroids are the most effective drugs for the management of seasonal or perennial allergic rhinitis, not surpassed by combination therapies with oral or topical antihistamines. On the other hand, no significant differences between the use of oral or topical antihistamines are evidenced. Allergen exposure and the resulting symptoms vary, and treatment adjustment is required. A step-up/step-down individualized approach to AR pharmacotherapy might hold the potential for optimal control of AR symptoms while minimizing side effects and costs. After choosing the best pharmacological therapy, compliance is a critical issue in the management of all chronic diseases. In order to improve compliance, it is important to consider patient preferences and views of patients and their caregivers, as ARIA guidelines remarks in the 2016 update.

Conclusion ARIA guideline has evolved to a technology-based implementation strategy to help rhinitis sufferers to have an active and healthy life and to reduce health and social inequalities caused by this very common disease, irrespective of their age, sex, or socio-economic status.

Introduction

Since it was launched in 1999, ARIA strategy has globally contributed to improve the management of allergic rhinitis, a disease underestimated by patients, and under-diagnosed and thus undertreated by physicians [1].

Compared with other medical conditions, many physicians view allergic rhinitis as little more than a nuisance illness, despite the fact that most of the patients present with symptoms of moderate-to-severe disease with overall diminished quality of life, impairing sleep quality and cognitive function, and causing irritability and fatigue [2]. Moreover, the impact on work productivity, school absenteeism, and the burden and costs are substantial.

The initial goals were (i) to propose a new allergic rhinitis classification, (ii) to promote the concept of multi-morbidity in asthma and rhinitis, and (iii) to develop guidelines with all stakeholders for global use in all countries and populations. ARIA—disseminated and implemented in over 70 countries globally—is now focusing on the implementation of emerging technologies for individualized and predictive medicine [3, 4].

The target audience of these guidelines is primary care clinicians, school nurses, pharmacists, specialists in allergy and clinical immunology, general internists managing patients with allergic rhinitis, and pediatricians. Ear-nose-throat specialists, other health care professionals, and health care policy makers can also benefit from them.

Management and pharmacological therapy

The relationship between treating physician and patients is crucial in all chronic diseases. ARIA 2016 [5•] strengthen the role of patients in the control and treatment of their symptoms by the use of technology, which improves physician-patient communication.

ARIA introduced with difficulties a new classification for the management of rhinitis since in the wide range of primary care medicine seasonal or perennial was the typically used term. The recommendations in the ARIA 2016 update apply directly to patients with moderate-to-severe AR.

They might be less applicable to treatment of patients with mild AR who frequently do not seek medical help and manage their symptoms themselves with medications available over the counter.

Specifically in relation to the pharmacological treatment of rhinitis, all the recommendations from the ARIA 2010 guidelines were not reviewed for the ARIA 2016 update. However, only three recommendations suggested by the ARIA panel members were updated, and three new questions were addressed.

The ARIA panel considered combined nasal symptoms, ocular symptoms, quality of life, work/school performance, and potential adverse effects important to choose the best pharmacological therapy.

These new six recommendations included drugs more commonly used for the management of rhinitis: intranasal corticosteroids (INCS), oral H1-

antihistamine (OAH), intranasal H1-antihistamine (INAH), and leukotriene receptor antagonist (LTRA).

Based on the available levels of evidence provided by the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) approach, the best pharmacological option for seasonal and perennial rhinitis is determined to avoid unnecessary consumption of drugs that impacts on the cost of therapy and patient compliance, as well as considerations of feasibility, acceptability, affordability, and health equity issues.

It confirmed that inhaled corticosteroids are the most effective drugs for the management of seasonal or perennial allergic rhinitis, not surpassed by combination therapies with oral or topical antihistamines. On the other hand, no significant differences between the use of oral or topical antihistamines were evidenced [5•].

Finally, the comparison between oral antihistamines and oral antileukotrienes did not show differences in relation to the control of rhinitis symptoms, but those patients who have concomitant asthma, especially exercise-induced and/or aspirin-exacerbated respiratory disease, might benefit from an LTRA more than from an OAH.

After choosing the best pharmacological therapy, compliance is a critical issue in the management of all chronic diseases. In order to improve compliance, it is important to consider patient preferences and views of patients and their caregivers, as ARIA guidelines remarks in the 2016 update.

ARIA continued reinforcing the importance of nasal problems (rhinitis and/or rhinosinusitis) in many uncontrolled asthmatic patients since asthmatic patients cannot be managed appropriately without considering rhinitis multi-morbidity. This is especially evidenced in older adults, an age group in which an increasing trend of asthma and rhinitis is observed; as well as high rates of polypharmacy.

Care pathways implementing emerging technologies for predictive medicine in rhinitis

Evidence-based guidelines are at the cornerstone of integrated care pathways (ICPs) [6, 7], structured multidisciplinary care plans that promote translation of guideline recommendations into local protocols and their subsequent application in clinical practice.

Implementation of guidelines in different settings and countries depends on the availability of health interventions (e.g., medical tests, medications, and equipment), availability of resources, and cultural differences, among others. Thus, local adaptation of recommendations can be required, and ICPs need to be developed at the national, regional, or local level. However, they should always be based on systematically reviewed evidence of desirable and undesirable consequences. The ARIA 2016 revision was used to develop the ICPs proposed by the European Innovation Partnership on Active and Healthy Ageing [6–8] by using MASK (MACVIA-ARIA Sentinel Network). ARIA developed a novel implementation strategy using mobile technology [9•, 10•] and a clinical decision support system that is deployed in 21 countries [11]. The ARIA 2016 revision was embedded in the clinical decision support system for real-time patient stratification by using mobile technology. The aim of the novel ARIA approach is to provide an active and healthy life to rhinitis sufferers,

whatever their age, sex, or socio-economic status, in order to reduce health and social inequalities incurred by the disease [12•].

MACVIA clinical decision algorithm in adolescents and adults with allergic rinitis

The selection of pharmacotherapy for patients with allergic rhinitis (AR) depends on several factors, including age, prominent symptoms, symptom severity, control of AR, patient preferences, and cost. Allergen exposure and the resulting symptoms vary, and treatment adjustment is required. Clinical decision support systems (CDSSs) might be beneficial for the assessment of disease control. CDSSs should be based on the best evidence and algorithms to aid patients and health care professionals to jointly determine treatment and its step-up or step-down strategy depending on AR control. The MACVIA-ARIA Sentinel Network is currently developing a CDSS to optimize AR control. An algorithm developed by consensus should be confirmed by appropriate trials. A step-up/step-down approach to AR pharmacotherapy based on patient response might hold potential for optimal AR control and cost of treatment [13]. MASK has proposed that electronic daily monitoring with Visual Analogue Scale (VAS) might help patients achieve optimal control of AR symptoms [11].

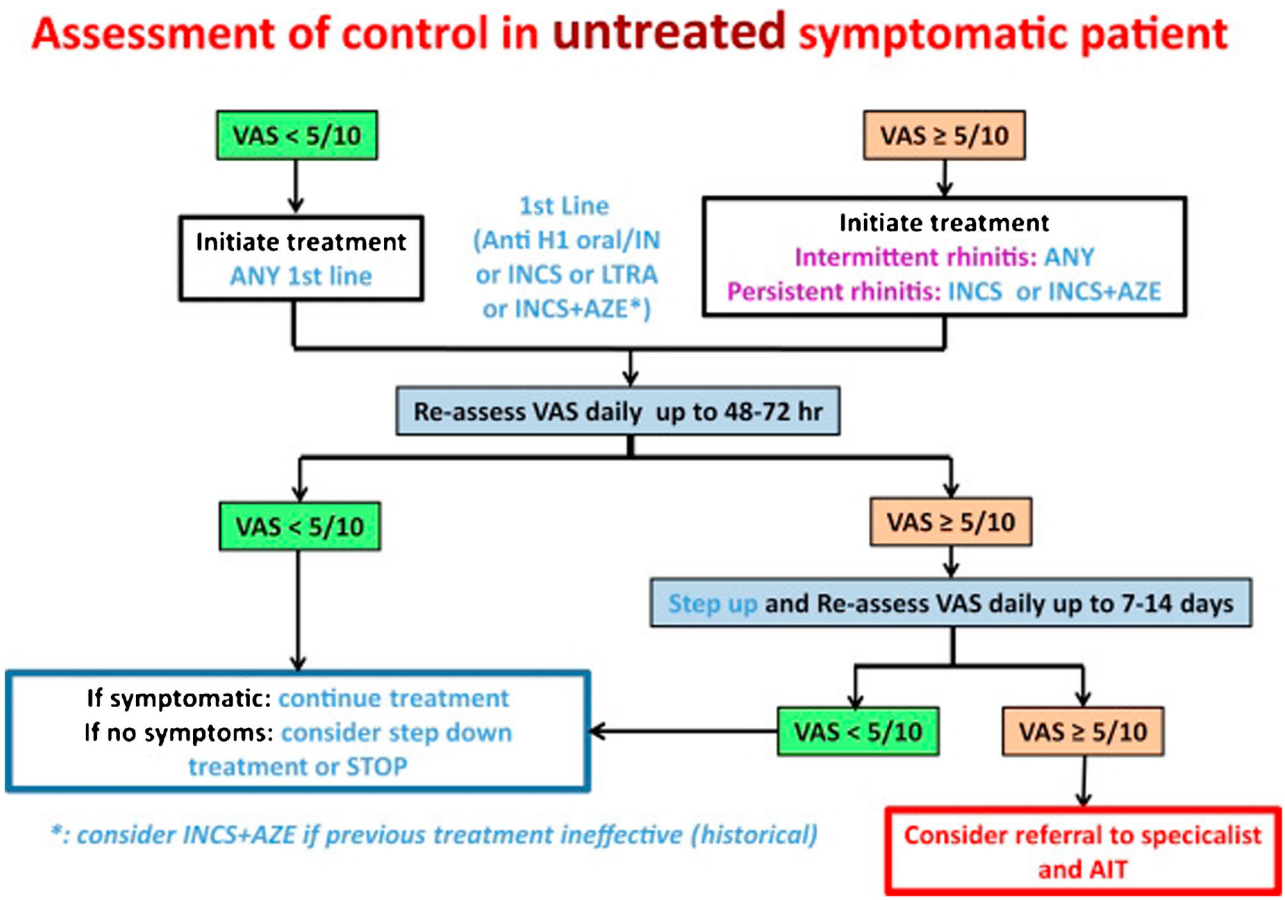

Fig. 1. Step-up algorithm in treated patients using the VAS (adolescents and adults). The proposed algorithm considers the treatment steps and patient preference and VAS levels in ratio. If ocular symptoms remain, add intraocular treatment.

Well-controlled AR is defined as a VAS score of 2 or less of 10. VAS cut-off values to step-up or step-down treatment were proposed by comparison with pain VAS scores and step-up schemes or from the literature in the field of allergy [14–16]. The treatment of AR also requires the consideration of (1) the type (rhinitis, conjunctivitis, and/or asthma) and severity of symptoms, (2) the relative efficacy of the treatment, (3) the speed of onset of action of treatment, (4) current treatment, (5) historic response to treatment, (6) patient's preference, (7) interest to self-manage, and (8) resource use.

ARIA proposes a simple algorithm to step-up or step-down AR treatment globally (Fig. 1) [9•]. However, its use varies depending on the availability of medications in different countries and depending on resources. Inherently, algorithms are a combination of individual decision nodes that represent separate recommendations. They require testing as a complete algorithm and comparison with alternative strategies to explore whether the combination of these separate recommendations leads to more benefit than harm when applied in practice. Thus this algorithm, as with other algorithms, requires testing in large-scale trials to provide the necessary certainty in available evidence. The proposed algorithm considers the treatment steps and patient

Fig. 2. Allergy Diary app.

preference and VAS levels in ratio and is being developed by MASK [11] for a CDSS available on Apple iOS and Android that will provide opportunities for evaluation. A step-up/step-down individualized approach to AR pharmacotherapy might hold the potential for optimal control of AR symptoms while minimizing side effects and costs [13]. ARIA is moving away from guidelines to more simplified treatment algorithms, and to get there, need care pathways that are different from guidelines, in that they incorporate a multifactorial team. To connect all the stakeholders in a care pathway, we need very simple language that is common to healthcare providers, pharmacists, and patients, and is easy to use. A mobile app was developed to make treatment recommendations to prescribers, using information provided by patients in a tandem system. Currently, patients can keep a daily record of medication use and allergic rhinitis and asthma symptoms with a free Allergy Diary app. (Fig. 2).

Allergy Diary app

The new app uses the allergic rhinitis clinical decision support system [9•] to provide treatment recommendations on the basis of specific data reported by the patient: the type of allergic rhinitis, current treatments, allergen exposure, and visual analogue score. VASs were validated in the MASK-rhinitis (MACVIA-ARIA Sentinel NetworK for allergic rhinitis) app (Allergy Diary) on smartphones screens to evaluate allergic rhinitis symptoms and disease control. The MASK-rhinitis VASs are a reliable and valid tool to assess allergic control on smartphone screens, at the population level [17]. Inputting basic information into the companion app, the healthcare professional will receive a simple treatment recommendation based on that information. The aim is to simplify care management and use the same VAS scores throughout the application to improve patient and healthcare communication. Rather than just advising a step-up or a step-down in treatment, we wanted to be able to say, this is the treatment MASK-rhinitis advise to step-up based on the information that you've provided about your patient [10•].List brief statements about the treatment aims of drug therapy. Format is as follows:

Conclusions

ARIA guideline has evolved to a technology-based implementation strategy to help rhinitis sufferers to have an active and healthy life and to reduce health and social inequalities caused by this very common disease, irrespective of their age, sex or socio-economic status.

In order to fulfill these objectives, ARIA needs that national allergy and immunology associations, respiratory medicine societies, as well as ENTs associations get involved in the dissemination of its guidelines in the wide spectrum of clinicians and pediatricians. As they are those who managed most of these patients, they should use this guideline to improve patient's quality of life and reduce the worldwide impact of rhinitis and asthma.

Compliance with Ethical Standards

Conflict of Interest

Dr. Neffen declares that he has no conflict of interest.

Dr. Ivancevich reports personal fees from Faes Farma, personal fees from Eurofarma, outside the submitted work.

Human and Animal Rights and Informed Consent

This article does not contain any studies with human or animal subjects performed by any of the authors.

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