



BRIEF RESEARCH REPORT

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Perceptions of the impact of individual allergic rhinitis symptoms: A survey of ARIA clinical experts

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ABSTRACT

Background: Allergic rhinitis (AR) is a highly prevalent disease. We aimed to assess the symptoms that physicians who see patients with AR perceive as the most bothersome in their patients.

Methods: We performed a cross-sectional study based on an online questionnaire sent to all members of the Allergic Rhinitis and its Impact on Asthma (ARIA) initiative. The survey included questions on the physicians' perceptions of patients' AR symptoms as well as of their own AR symptoms.

Results: Among 401 respondents, 155 (38.7%) reported having AR. ARIA members reported nasal symptoms to be the most frequent (89.7%) and bothersome (80.0%) symptoms experienced by themselves. Likewise, nasal symptoms were reported by ARIA members as the most frequent (94.8% in members with AR vs 96.0% in members without AR) and bothersome (57.0% in members with AR vs 67.9% in members without AR) in their patients. We found a significant association ($p = 0.001$) between physicians' own symptoms and those perceived as the most bothersome in their patients.

Conclusion: Physicians perceive nasal symptoms to be the most frequent and the most bothersome symptoms in AR patients. The physicians' personal experiences with AR may influence their perception of patients' symptoms.

Keywords: Allergic rhinitis, Survey, Professional-patient relation

INTRODUCTION

Patients with allergic rhinitis (AR) present with nasal symptoms¹ and, frequently, with ocular and lower respiratory symptoms.^{2,3} These symptoms may impact AR patients differently, according to

the severity of the disease and to patients' perceptions of values and preferences (V&Ps).

Healthcare interventions typically result in benefits and harms. Patients' values and preferences concern the relative importance patients place on

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specific benefits and harms. At a group level, considering V&Ps are essential for patient-centred guidelines, particularly as guidelines typically deal with multiple outcomes which may be differently affected by interventions. In this context, a systematic review on patients' V&Ps in allergic rhinitis found that patients considered (i) nasal symptoms as more important than ocular ones and (ii) nasal obstruction as the most impactful nasal symptom (even though the certainty of the evidence tended to be low).⁴ This systematic review at the group level can be complemented by other studies with different approaches.

At the individual patient level, in the context of daily clinical practice, it is also relevant to consider each patient's perspective on which AR symptoms have the highest impact. However, individual patient perceptions may not always align with those of the physician. Indeed, such discrepancies between healthcare professionals and patients in their perceptions of disease have been reported in chronic inflammatory disorders, namely systemic sclerosis and psoriasis.^{5,6} This may be particularly important in a highly prevalent disease such as AR, as physicians often present AR themselves.⁷ Physicians' personal experiences with their own disease, including its symptoms and their impact, may shape their perception of their patients' disease manifestations.

The main aim of this study was to assess the symptoms that ARIA members who see patients with AR perceive as the most bothersome in their patients. As a secondary endpoint, we assessed whether there was an association between the most frequent and bothersome symptoms reported by physicians who suffer from AR and their perception of patients' symptoms. Although this study does not formally elicit values and preferences, it may partly complement the results of the systematic review that addressed them.

METHODS

We conducted a cross-sectional study based on an online structured questionnaire sent by email to all registered Allergic Rhinitis and its Impact on Asthma (ARIA) initiative members. ARIA is a network of experts on AR and asthma, including healthcare professionals and researchers.⁸

The survey was anonymous and included 3 different sections ([Supplemental Box 1](#)). The first section inquired about demographic and professional information. Two additional questions in this section asked whether the respondents managed patients with AR in their clinical practice and whether the respondents had AR themselves. The second section targeted physicians who managed patients with AR. There were 3 questions: (i) which symptoms were reported as the most frequent by their patients with AR (nasal, ocular, asthma, or other); (ii) their perception of which symptoms were described as the most bothersome by their patients with AR (nasal, ocular, asthma, or other), and (iii) specifically, what was the most bothersome nasal symptom (nasal congestion, itching, rhinorrhea, or sneezing). For respondents who reported having AR, a third section encompassed questions on physicians' own symptoms.

A follow-up email was sent as a reminder to improve response rates. The questionnaire was sent to 699 respondents. Responses were collected between 8 November and 31 December, 2023.

We assessed whether physicians with AR differed from those without AR on the symptoms they perceive as the most frequent and bothersome in their patients. Additionally, we assessed, among respondents who have AR, whether there is an association between physicians' own symptoms and their perception of symptoms reported by their AR patients. Finally, we studied the association between age and sex of ARIA members with AR and their most frequent and bothersome symptoms.

Categorical variables were described using absolute and relative frequencies. Chi-square or Fisher's exact test were used to test for the association between variables.

RESULTS

A total of 401 responses were received (57.4% of ARIA members); 254 respondents (63.3%) were from Europe ([Table 1](#)); and 47.9% respondents were aged between 51 and 65 years ([Table 1](#)). Most respondents were physicians (90.8%) and, among these, 248 (68.1%) reported having more

(i) Age - N (%)		(vi) Specialty - N (%)	
18-35 years	14 (3.5)	Allergy/Allergology	155 (38.7)
36-50 years	79 (19.7)	General practice/Primary care	11 (2.7)
51-65 years	192 (47.9)	Internal medicine	46 (11.5)
66 or more years	109 (27.2)	Otorhinolaryngology (ENT physician)	44 (11.0)
Not answered	7 (1.7)	Paediatrics	68 (17.0)
(ii) Sex - N (%)		Pulmonology	95 (23.7)
Female	149 (37.2)	Other or not a physician	47 (11.7)
Male	251 (62.6)	(vii) Years of clinical practice - N (%)	
Prefer not to say	1 (0.2)	Less than 10	17 (4.7)
(iii) Location - N (%)		10-25	88 (24.2)
Africa	14 (3.5)	More than 25	248 (68.1)
Asia	53 (13.2)	Not in clinical practice	11 (3.0)
Europe	254 (63.3)	(viii) Sees patients with AR - N (%)	
North America	36 (9.0)	Yes	340 (84.8)
Oceania	9 (2.2)		
South America	35 (8.7)		
(iv) Suffers from AR - N (%)			
Yes	155 (38.7)		
No	235 (58.6)		
Prefer not to say	11 (2.7)		
(v) ARIA classification - N (%)			
Mild intermittent	78 (50.3)		
Mild persistent	40 (25.8)		
Moderate-severe intermittent	17 (11.0)		
Moderate-severe persistent	20 (12.9)		

Table 1. Demographics, clinical characteristics and professional profile of survey respondents (n = 401)

than 25 years of clinical practice. AR was reported by 155 (38.7%) ARIA members and, among those, 135 (87.1%) respondents reported seeing patients with AR. According to the ARIA classification, most members reported having mild intermittent AR (50.3%), followed by mild persistent (25.8%), moderate-severe persistent (12.9%), and moderate-severe intermittent rhinitis (11.0%). ARIA members with AR reported nasal symptoms to be their most frequent (89.7%) and bothersome (80.0%) symptoms (Fig. 1A and B). Among nasal symptoms, nasal congestion was considered to be the most bothersome (65.2%), followed by rhinorrhea (19.4%) (Fig. 1C).

Overall, the symptoms reported by allergic and non-allergic ARIA members as the most frequent in

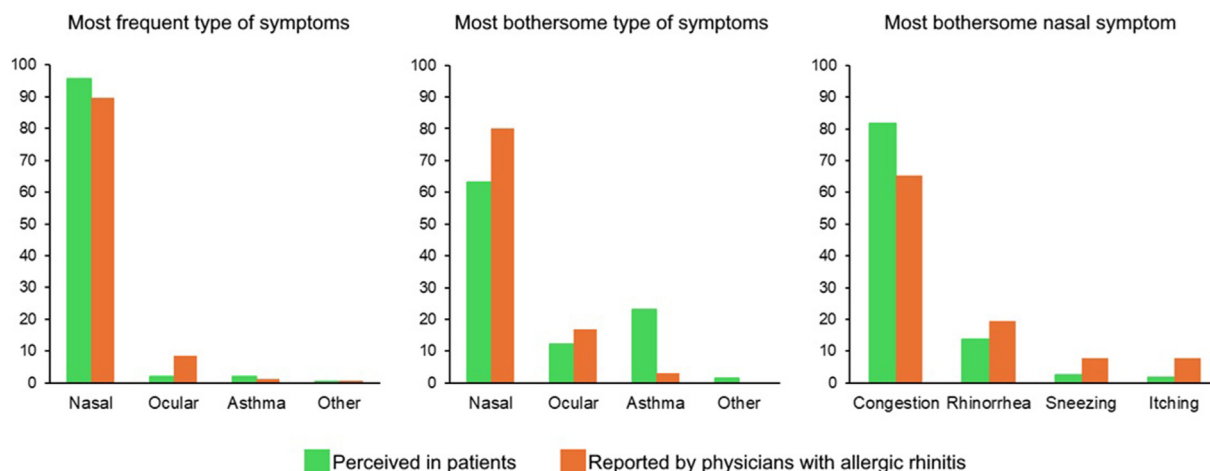


Fig. 1 Most frequent (A) and most bothersome (B and C) allergic rhinitis symptoms perceived in patients by ARIA members and reported by ARIA members.

their patients were nasal symptoms (94.8% in members with AR vs 96.0% in members without AR) (Supplemental Table 1A). Nasal symptoms were indicated as the most bothersome to patients (57.0% in members with AR vs 67.9% in members without AR) (Supplemental Table 1B). Asthma was identified as the most bothersome symptom in patients by 25.2% of ARIA members with AR and 21.0% of ARIA members without AR. Among nasal symptoms, nasal congestion was perceived as the most bothersome in patients (according to 83.7% of ARIA members with AR and 82.1% of ARIA members without AR) (Supplemental Table 1C).

The most bothersome set of symptoms experienced by physicians suffering from AR was significantly associated with those perceived as the most bothersome to their patients ($p = 0.001$) (Supplemental Table 2). The same was not observed for the most frequent set of symptoms experienced by physicians suffering from AR (Supplemental Table 3). No significant association was found between the presence vs absence of AR in physicians and their perception of the most frequent and bothersome patients' symptoms.

Similarly, there were no significant associations between the age or sex of physicians and their most bothersome (Supplemental Table 2) or frequent (Supplemental Table 3) set of symptoms.

DISCUSSION

In this survey, we found that physicians (whether or not they suffer from AR) perceive nasal symptoms to be the most frequent and the most bothersome symptoms among their AR patients.

In a recent systematic review on AR patients' values and preferences, nasal symptoms were identified as the most frequent manifestation of AR, with nasal congestion being reported as the most frequent and the most bothersome symptom.⁴ Nevertheless, in 3 out of 13 included studies, and in 5 out of 8 studies, an ocular and a non-nasal respiratory symptom, respectively, were identified as the most or second most important symptom.⁴ This study suggests that physicians' perceptions on the most bothersome symptom in patients with AR may be in line with the results of the systematic review.

Interestingly, there were no differences between age groups and sex regarding symptoms considered the most frequent and bothersome by ARIA members suffering from AR. Although there is some evidence that a different symptom profile may be associated with those variables,⁹⁻¹² such was not observed in our study. In fact, ARIA members may have more sociodemographic similarities among themselves (not being fully representative of patients with AR) and more self-awareness of their disease than patients included in other studies, which may partly explain our findings.

There are some limitations to this study. Firstly, the sample was exclusively composed of ARIA members, excluding healthcare professionals who are not affiliated with the ARIA initiative. This may introduce a bias in our study due to the fact that allergists, who usually see more severe cases of AR, are overrepresented in the ARIA group.

In addition, demographic characteristics of ARIA members may raise concerns on the generalizability of our results. There is an overrepresentation of physicians older than 50 and, although we found no evidence of an association between symptoms and age, a different symptom profile has been previously reported in older individuals with AR.¹² Our survey did not specifically inquire about the physicians' perception of paediatric patient-reported symptoms. Since in the context of paediatric care it is common that a caregiver intervenes in children's symptom reporting, it is possible that the influence of the physician's perspective may differ in this subgroup. Finally, other limitations of our study include possible information biases arising from errors when filling in the form.

Our study has also some strengths. To the best of our knowledge, this is the first study to address whether the physicians' own experiences as AR patients influence their perceptions on their patients' symptoms. Our results suggest that patient-reported outcome measures may be of particular importance in the clinical assessment of highly prevalent diseases as a means to adequately incorporate patients' V&Ps in the management of their disease and to enhance communication between both parts.

In conclusion, our study reveals that nasal symptoms, particularly nasal congestion, are the most frequent and the most bothersome symptoms, not only as perceived by physicians when evaluating their patients, but also as experienced by themselves as AR patients. Furthermore, our results suggest a possible association between the physicians' personal experiences with AR and their perception of patients' symptoms. Despite some limitations, the present study provides a valuable insight into patient-physician interactions in the context of a highly prevalent disease.

Abbreviations

AR: Allergic Rhinitis; ARIA: Allergic Rhinitis and its Impact on Asthma; V&P: Values and Preferences

Author contribution statement

Sara Gil-Mata: Data analysis and interpretation, Drafting the article. Tatiana Teixeira: Data analysis and interpretation, Drafting the article. Anna Bedbrook: Data collection, Critical revision of the article. Jean Bousquet: Conception, Data collection, Critical revision of the article. Bernardo Sousa-Pinto: Conception, Data collection, Critical revision of the article. Rafael José Vieira: Conception, Data collection, Critical revision of the article.

Authors' consent for publication

All authors have provided consent for the publication of the present manuscript.

Ethics approval

Not applicable.

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Declaration of competing interest

The authors report no competing interests.

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None.

Availability of data and materials

The dataset that supports the findings of this study is available from the corresponding author upon reasonable request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.waojou.2024.100999>.

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Appendix

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