

Current Allergic Rhinitis Experiences Survey (CARES): Health-care practitioners' awareness, attitudes and practices

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ABSTRACT

Allergic rhinitis (AR) is a common health problem in the United States, with significant comorbidities and impairment of quality of life despite the availability of many prescription (Rx) and over-the-counter (OTC) medications. The health-care practitioners (HCPs) arm of the Current Allergic Rhinitis Experiences Survey (CARES) assessed HCPs' perceptions about the current management of AR. This U.S.-based national survey included 375 primary care physicians and 375 nurse practitioners/physician assistants. Participants were screened to ensure that they treat ≥ 15 AR sufferers per month during allergy season. The majority of HCPs (86%) agreed that AR patients can easily recognize allergy symptoms after diagnosis and that 57% of their patients come to them self-recognizing their symptoms. A total of 82% strongly agreed that AR sufferers are primarily diagnosed via history and physical and do not typically undergo diagnostic testing until after pharmacologic intervention. HCPs reported that 63–77% of AR sufferers can easily manage AR once treatment is established. According to surveyed HCPs, OTC medication should precede an Rx medication for AR management. A total of 82% HCPs considered intranasal steroids (INSs) to be the gold standard AR treatment and have minimal safety concerns about INS use. HCPs perceive that patients can easily recognize and self-manage their AR symptoms. Patient history/symptoms and physical examination are the primary methods of AR diagnosis. INSs are considered the gold standard for treatment of AR. However, most HCPs feel OTC medication should be tried before Rx medication for AR management.

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Allergic rhinitis (AR) is one of the most common chronic medical conditions seen in pediatric and adult populations.¹ It is characterized by sneezing, nasal itching, nasal congestion, and rhinorrhea. In addition, many patients have eye watering and itching, ear itching, headache, and cough. In addition to these symptoms, a number of comorbid conditions are associated with AR, including asthma, sinusitis, otitis media with effusion, and sleep apnea, with asthma present in up to 40% of patients with AR.^{2,3} AR is the most common allergic disease in the United States and is highly prevalent, affecting up to 60 million people.⁴

AR is primarily treated in a primary care practice setting.⁵ The Allergies in America survey of 2500 adult patients with AR showed that the majority of patients

received their diagnosis of AR in a primary care setting (general practice, family practice, or internal medicine) as opposed to a specialty setting (allergy or otolaryngology; 51% versus 31%, respectively).⁶ AR is treated across multiple medical disciplines, such as generalists and specialists and physicians and associated health-care practitioners (HCPs). This multidisciplinary approach is reflected in the design of the National Allergy Survey Assessing Limitations, which comprised equal numbers of HCPs who treat AR, including primary care physicians (PCPs; family medicine and internal medicine) and specialists (allergy and otolaryngology), and physician assistants (PAs) and nurse practitioners (NPs).⁷

Management of AR involves allergen avoidance, pharmacotherapy, and allergen immunotherapy.¹ A number of classes of pharmacologic agents available, either over the counter (OTC) or *via* prescription (Rx), have proven effective in the treatment of AR, including oral and intranasal antihistamines, intranasal corticosteroids (INSs), combination INSs/antihistamines, oral and topical decongestants, intranasal cromolyn sodium, and leukotriene antagonists.^{1,4} Despite the availability of multiple treatment options, most HCPs do not believe that most nasal allergies are well controlled during allergy season.⁸ INSs are the most effective pharmacologic agent and are a mainstay of Rx treatment of AR.⁴ Analysis of prescribing patterns of INSs established that the majority of Rx's for INSs (62.8%)

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Table 1 Prevalence data used to weight HCP data

Specialty	Total HCPs	Total PCPs	Total PA/NPs
General practice (%)	2.0	4.5	—
Family practice (%)	21.4	47.8	—
Internal medicine (%)	21.4	47.7	—
NPs (%)	36.9	—	66.8
PAs (%)	18.3	—	33.2

HCP = health-care practitioner; NP = nurse practitioner; PA = physician assistant; PCP = primary care provider.

are being written by PCPs and that ~11% are being written by NPs and PAs.

Because of the high prevalence of AR and the nature of AR as a chronic disease, there are high public health costs associated with the disease.⁹ The estimated annual costs of AR range from \$2 to 5 billion (in 2003 dollars), which includes both the direct costs of physician visits and the medications and indirect costs, such as work absenteeism and decreased productivity.¹⁰

The Current Allergic Rhinitis Experiences Survey (CARES) was designed to better understand perceptions about AR, its symptoms, disease recognition and diagnosis, and treatment options from the perspectives of both consumers (AR sufferers) and primary HCPs. The HCP arm of the CARES study assessed HCPs' perceptions of how AR is currently being managed. AR sufferers' perceptions regarding the diagnosis and management of AR are presented in a separate article.

METHODS

This U.S.-based survey of 750 HCPs included 375 PCPs and 375 NPs/PAs who were representative of their respective populations at a margin of error of $\leq 5\%$ (*i.e.*, results for all HCPs are accurate within a range of $\pm 3.6\%$, and results for PCPs and NP/PAs are accurate within a range of $\pm 5\%$). Data were collected *via* an anonymous and confidential online survey conducted by a third party (DeNovo Research Solutions, Delmar, NY). Respondents participating in this research were members of an online panel and were sent an invitation for participation *via* E-mail. HCP data were weighted using the data presented in Table 1.

HCPs met the following criteria for participation in the study: they practiced in a general medicine, family medicine, or internal medicine setting; they treated at least 15 AR sufferers per month during allergy season; they were licensed to prescribe nonnarcotic medications; and they spend at least one-half of their work hours in an office setting and 75% of their time in direct patient care.

The complete CARES (HCPs and AR sufferers) was designed to obtain information to test 17 hypotheses

Table 2 Hypotheses

Hypothesis
AR is primarily self-managed with prescription and/or OTC medications
Consumers can typically self-recognize nasal allergy symptoms
Nasal allergies are diagnosed mainly based on symptomatology/history
AR sufferers are knowledgeable about their nasal allergies
Consumers generally obtain information about treating AR from multiple sources
Consumers are driving AR discussions with HCPs and generally discuss AR only if dissatisfied or seeking treatment recos/refills
Detailed discussions are typically NOT occurring in the HCP office about nasal allergies and INSs, when prescribed
ARs can have a major impact on patients' lives
Consumers are aware that there are different medications available to treat nasal allergy symptoms
AR is being treated primarily in the primary care setting
Treatment of nasal allergies is not always dependent on the cause (HCPs only)
INSs are the gold standard treatment for AR
Access to Rx meds/INSs is limited for some patients (<i>e.g.</i> , patients without Rx drug coverage/health insurance are generally limited in terms of access to the best AR treatment—INSs)
INSs are perceived to be safe (HCPs only)
INSs are perceived to be easy to use
Availability of OTC medications will generally NOT deter patients from going to their HCP for advice
OTC medications are perceived to be good treatment for AR

AR = allergic rhinitis; HCP = health-care practitioner; INS = intranasal corticosteroid; OTC = over the counter; Rx = prescription.

regarding the diagnosis, management, and perception of AR (Table 2), and all 17 hypotheses were tested in the HCP portion of the survey. The survey was designed to obtain information on the diagnosis of AR, classification of AR patients, HCP interactions with AR patients/office visits, treatment of AR, perception of INSs, and general demographics.

RESULTS

The specialties of HCPs participating in the study are presented in Table 3, and the study surveyed equal numbers of physicians and NPs/PAs. The vast

Table 3 HCP representation

Specialty	Total HCPs (n = 750) (%)
General practice	2.0
Family practice	21.4
Internal medicine	21.4
NP	36.9
PA	18.3

HCP = health-care practitioner; NP = nurse practitioner; PA = physician assistant.

Table 4 Profile of patients with AR

	Total HCPs (n = 750)	PCPs (n = 375)	NP/PAs (n = 375)
Mean no. of adult AR patients per month	81.2	93.8	71.1
Perceived mean percentage of AR patients receiving			
Rx only	35	44	29
OTC only	23	21	25
Rx + OTC	38	31	43
Neither	4	4	3
Mean percentage of patients with AR receiving INSs	63	63	64

AR = allergic rhinitis; HCP = health-care practitioner; PA = physician assistant; PCP = primary care provider; NP = nurse practitioner; OTC = over the counter; Rx = prescription.

majority of NPs/PAs (91%) indicated that they have the authority to adjust the treatment algorithm for AR and spend a mean of 0.5 hr/wk in consultation with their supervising physicians. A total of 68% of NPs/PAs surveyed stated that they do not consult with their supervising physician about their AR patients. Furthermore, NP/PAs estimated that they spend a mean of 10 hr/wk with patients with AR.

The demographics of AR sufferers evaluated and treated by the HCP respondents are presented in Table 4. As estimated by HCPs, AR in their practice is comprised of 44% seasonal AR, 26% perennial AR, 13% nonallergic rhinitis, and 21% mixed rhinitis (rhinitis symptoms in response to both traditional aeroallergens and other triggers).¹¹ PCPs were significantly more likely than NP/PAs to see or treat a higher proportion of patients with perennial allergic rhinitis (27.7 vs 25.4%, respectively) and non-allergic rhinitis (13.6 vs 12.2%, respectively). There was no difference between

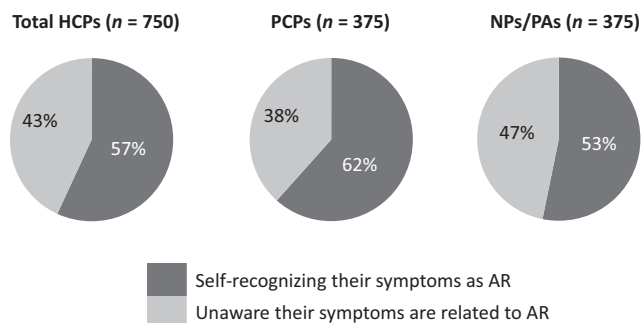


Figure 1. How allergic rhinitis (AR) patients “come to” the doctor in terms of recognizing symptoms presented as mean percentage of patients. Health-care practitioners (HCPs) indicated that most of their patients with AR self-recognize their symptoms as AR.

PCPs and NP/PAs regarding the percentage of their patients who are classified as moderate/severe. HCPs estimated that the majority of their patients are receiving Rx medications (73%), either in combination with OTC medications (38%) or without OTC medications (35%), with 67% of patients receiving INSs. HCPs estimated that just 23% of their AR patients are taking only OTC medications for the treatment of AR.

HCPs surveyed stated that 57% of their patients with AR present to their office recognizing that their nasal symptoms are caused by allergies and not another condition (Fig. 1). A total of 82% strongly agreed that diagnosis is obtained primarily *via* patient history/symptoms and a physical examination, and nearly all (96–98%) typically discuss current symptoms and history of symptoms and perform a physical examination to diagnose AR. HCPs estimated that <20% of AR patients undergo diagnostic testing, and the majority of HCPs (56%) felt that there has been no change in diagnostic testing in the past 5 years. HCPs stated that, among patients who undergo diagnostic testing, 82% do so only after trying an HCP-recommended medication. Nearly one-half of patients who undergo diagnostic testing are referred to a specialty clinic. A total of 86% of HCPs agreed and 49% strongly agreed that once patients are diagnosed with AR, they can easily recognize AR symptoms.

HCPs indicated that 77% of patients with mild AR and 63% of patients with moderate-to-severe AR can self-manage their nasal allergies, either on their own or once treatment has been established. HCPs perceived that a moderate level of interaction is required for patients with AR; the survey showed a mean level of interaction score of 6.8, where 0 is no/little interaction required to manage AR, 5 is moderate interaction required, and 10 is significant interaction required. HCPs estimated that most patients with AR are visiting their office fewer than two times per year (Fig. 2) and that follow-up visits to evaluate the efficacy of treatment generally do not occur. Only

Figure 2. Frequency of patients visiting the health-care practitioner (HCP) office to discuss allergic rhinitis (AR) represented as mean percentage of patients. HCPs indicated that patients with AR are coming in to discuss allergies two times or fewer per year.

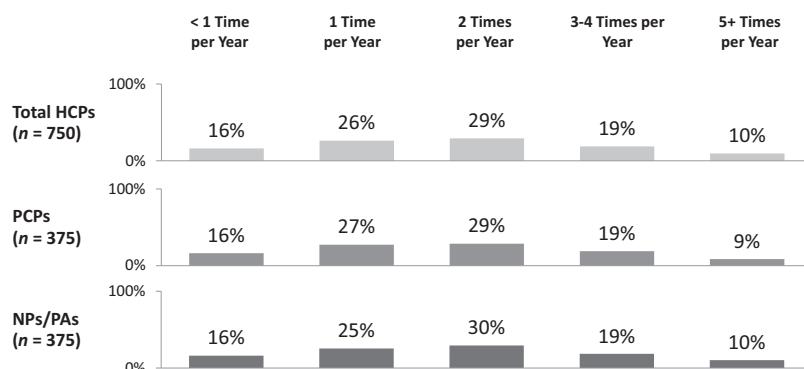
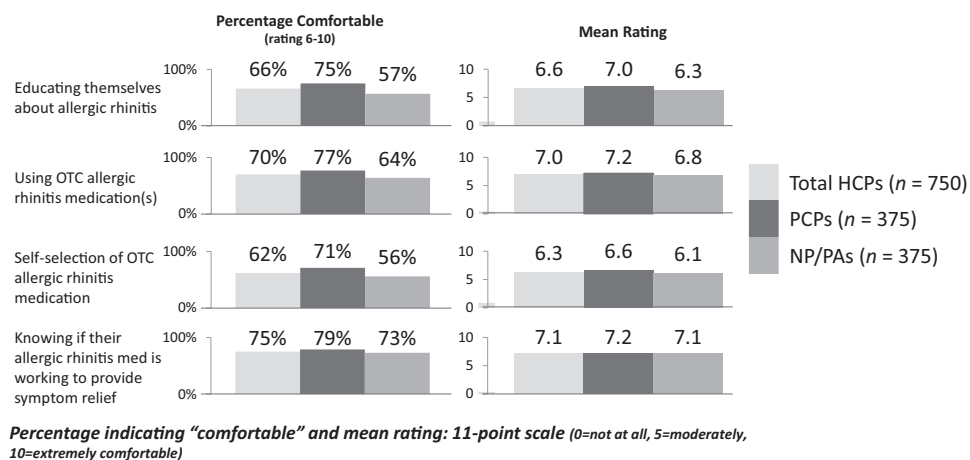


Figure 3. Level of comfort with patients with allergic rhinitis (AR) doing each without health-care practitioner (HCP) guidance. HCPs stated that they are comfortable with patients with AR educating themselves and choosing over-the-counter (OTC) medications to treat their allergies. Few HCPs stated that they are uncomfortable with patients self-educating and selecting OTC medications.



35% of patients have a follow-up visit to discuss medication, and routine contact (the HCP office following up with the patient) shortly after a visit occurs for only 19% of patients with AR.

In practice, HCPs estimated that ~70% of patients with AR self-manage their allergies (with or without HCP recommendation) and that patients approach their HCP only if they are having a problem. Only 31% of visits with patients with AR are specifically to discuss allergies, although allergies are discussed during 50% of visits by either the patient or the HCP. HCPs indicated that more discussion occurs during a first visit or if patients are dissatisfied with treatment; minimal discussion occurs if patients are satisfied with treatment. HCPs stated that during the first visit, 54% of the time is spent counseling patients on AR and discussing treatment options. HCPs typically discuss AR symptoms, medications that treat AR, recognition of allergic triggers, and strategies for avoidance of triggers. On subsequent visits, HCPs spend much more time counseling patients on AR and discussing treatment options when patients are unsatisfied with treatment (49% of total appointment time) compared with when patients are satisfied with their treatment (19% of total appointment time).

HCPs stated that they are comfortable with patients with AR educating themselves, selecting OTC medications, and using OTC medications for the treatment of

their allergies (Fig. 3). Only 36% of HCPs surveyed strongly agreed that they offer patients much more information about AR treatment than any other source. HCPs indicated that when visiting HCPs, 70% of patients request a class of medication but typically do not request a specific brand. A total of 59% of HCPs agreed and 36% strongly agreed that patients should try appropriate OTC medications before obtaining an Rx. HCPs perceived that 60% of patients try at least one OTC medication before coming to them. After describing medication options, 33% of HCPs stated that they allow patients to choose their own medication, whereas 67% recommend a specific medication. HCPs stated that they did not feel that their treatment recommendation should be completely contingent on the cause of the allergy symptoms, and only 30% strongly agreed that they recommend OTC antihistamines to confirm that a patient's symptoms are caused by allergies. HCPs indicated that on initially obtaining an Rx for an INS, most patients do not come to the office to obtain a refill (only 33% of patients do). HCPs stated they will refill an INS Rx for a mean of ~7 months before requiring an office visit.

Eighty-two percent of HCPs surveyed agreed and 52% strongly agreed that INSs are the gold standard for the treatment of AR (Fig. 4). A total of 79% of HCPs agreed and 52% strongly agreed that INSs provide better symptom relief than available OTC options.

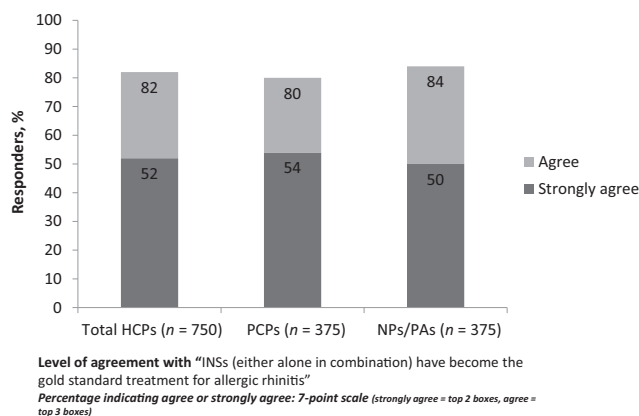


Figure 4. Level of agreement that intranasal steroids (INSs; alone or in combination) have become the gold standard for the treatment of allergic rhinitis (AR). The majority of health-care practitioners (HCPs) agreed that INSs are the gold standard treatment for AR.

HCPs typically prescribe INSs as a second- or third-line agent to treat mild AR; only 19% of patients with mild AR are prescribed an INS as first-line therapy. In patients with moderate-to-severe AR, 39% receive an Rx for an INS from their HCP as first-line treatment, whereas 59% receive an Rx for an INS as second-line treatment. When discussing INS administration with their patients, 83% of HCPs stated that they tell patients to take an INS daily to prevent symptoms from occurring.

The vast majority of HCPs profiled (86%) agreed that INSs have a strong safety profile. Moreover, 55% of HCPs agreed and 28% strongly agreed that INSs are safer than many OTC allergy medications. Conversely, only 4% of respondents strongly disagreed with the statement that INSs are safer than many OTC medications, and <1% strongly disagreed with the statement that INSs have a strong safety profile. Approximately 50% of HCPs stated that they rarely or never monitor or test for side effects associated with corticosteroid use, such as hypothalamus–pituitary–adrenal axis suppression, increased intraocular pressure, and cataracts. HCPs indicated that they have minimal concern about any of these adverse events for patients with AR receiving INSs. INSs are perceived as easy to use by HCPs, who rated ease of use with a mean score of 7.4 on a scale of 0–10, with 10 being the easiest to use.

Despite the stated belief that INSs are safe, effective, and easy to use, most HCPs recommend OTC medications as first-line treatment for patients with either mild or moderate/severe AR. When asked to select reasons for recommending OTC medications (respondents were allowed more than one response), 70% of HCPs stated that they recommend OTC medications because they offer access to therapy for patients without Rx coverage. A total of 65% of HCPs stated that they recommend OTC medications because it is more

convenient for patients. OTC medications are perceived as good treatment for AR by HCPs, with only 15% of respondents stating they strongly agreed with the statement that OTCs are not as good a treatment for AR as Rx medications. A total of 43% of HCPs agreed that AR is undertreated because it is too expensive for patients to come into the office; 76% agreed and 51% strongly agreed that OTC medications are a cost-efficient treatment for patients with AR. A total of 80% of HCPs indicated that second-generation antihistamines becoming available OTC had a positive impact on patients' ability to effectively manage AR, and 47% felt that it had an extremely positive impact. HCPs, however, did not feel that the availability of OTC medications will deter patients from obtaining advice from an HCP. A total of 61% of HCPs strongly agreed that if patients are bothered by their allergies, they will come to their HCP for advice. Only 28% of HCPs strongly agreed that more OTC allergy medications becoming available have decreased the volume of patients coming to their office.

DISCUSSION

AR is a chronic inflammatory disease of the nasal mucosa that is highly prevalent and is associated with significant health-care costs. The practitioner arm of the CARES was conducted to assess HCP perceptions on the current management of AR and included 375 physicians and 375 NPs/PAs who currently practice in a primary care setting and see at least 15 patients with AR per month during allergy season. As opposed to previous surveys, which included both PCPs and specialists, the CARES included only HCPs who practice in a primary care setting.^{6,7} Analyses of prescribing patterns for INSs have indicated that the majority of INS Rx's are being written in a primary care setting. Moreover, in the managed care environment, primary care continues to be the entry point for patients into the health-care system, and NPs and PAs play a key role in the management of patients with AR. Therefore, to reflect the current AR treatment patterns, the CARES surveyed only primary care HCPs and included NPs and PAs. The diagnosis of AR typically occurs in a primary care setting and is based on discussion of a patient's previous and current symptoms and a physical examination. Diagnostic testing is not commonly performed, and when it is performed, it frequently occurs in a specialty setting.

HCPs stated they were comfortable with patients' self-management of AR with or without initial consultation. HCPs perceive that patients with AR can easily recognize their symptoms and that management with OTC medications should be attempted before obtaining Rx medications. OTC medications are generally perceived as effective for the treatment of AR and are

commonly used as first-line agents in patients with either mild or moderate/severe AR. AR is associated with high costs for both ambulatory care visits and Rx medications (\$187 and 305, respectively, per person per year in 2005), and there is a concern among HCPs surveyed in CARES that AR is undertreated due to cost and/or access to health care and medications.¹² OTC medications can provide value by expanding access to treatment and decreasing consumer and overall health-care costs.¹³ OTC medications are typically less costly than Rx medications; in 2005, the average retail price for OTC medications was \$7 compared with \$96 and 28 for brand name and generic Rx drugs, respectively.¹⁴ Additionally, it has been estimated that every dollar spent by consumers on OTC medications saves the U.S. health-care system \$6–7.¹³

Notwithstanding the value of OTC medications, HCPs stated that INSs are the gold standard for the treatment of AR. HCP perceptions of INSs are reflective of current evidence-based guidelines. The Joint Task Force on Practice Parameters (which represents the American Academy of Allergy, Asthma, & Immunology; the American College of Allergy, Asthma, & Immunology; and the Joint Council of Allergy, Asthma, & Immunology) states that INSs are the most effective medication class for controlling symptoms of AR and are more effective than combination therapy with antihistamines and leukotriene receptor antagonists. In the AR management algorithm, INSs may be used as first-line agents for either mild or moderate-to-severe AR.⁴ Additionally, the Allergic Rhinitis and its Impact on Asthma group stated that INSs are the most effective medication available for treatment of both AR and nonallergic rhinitis.³

HCPs surveyed had a very positive perception of the safety profile of INSs, which has a basis in the published literature. As a class, INSs have established a good safety profile over 15 years of clinical experience in the treatment of AR.¹⁵ INSs can be used for long-term treatment without evidence of significant topical or systemic side effects.^{3,15} There is no clear evidence of hypothalamus–pituitary–adrenal axis suppression and no clear association between INS use in AR and cataract or glaucoma development.^{15,16} Although the U.S. Food and Drug Administration requires a class warning for INSs about potential reduction in growth velocity in pediatric patients, data regarding INS and growth velocity are conflicting.¹⁷ One study of children aged 6–9 years with perennial AR showed a 0.9-cm difference in height increase after 1 year in patients randomized to receive an INS compared with placebo.¹⁸ However, other studies have not shown a significant difference in prepubertal growth velocity after 1 year of treatment.¹⁷ Oral antihistamines, currently approved as OTC medications in the United States, are

also generally considered safe, with relatively few and mild adverse events, even after long-term use.¹⁹

Previous surveys have indicated that the vast majority of HCPs (98%) are somewhat to very satisfied with INSs for the treatment of AR.⁶ Furthermore, surveys of patients with AR have shown high levels of patient satisfaction with INSs.^{8,16}

The recent approval of some INSs in the United States as OTC medications will allow patients expanded access to the gold standard medication for the treatment of AR and will allow patients additional options in the self-management of their disease. However, the approval of additional OTC options for AR treatment will not limit or decrease the need for HCP intervention should patients have an inadequate response to their OTC medications or worsening disease symptoms or require guidance in understanding their symptoms and selecting appropriate therapy. Although this survey was conducted among HCPs who practice in a primary care setting to reflect real-life management of AR, there will continue to be a role for specialist care. Studies have indicated that consultation with an allergist/immunologist can improve outcomes and patient satisfaction and should be considered when disease can not be adequately self-managed.⁴

This study was conducted as a self-administered online survey, there are some limitations. Results were obtained based on the recall of the study participants, not through a chart audit, patient registry or claims database. This type of survey may have recall bias given the nature in which it was conducted; however this study's primary aim was to understand the perceptions of HCPs about the management of AR, and a survey was the most appropriate tool in which to carry this out. Secondly, the questions that were asked of HCPs had not been formally validated. However, the same questions were asked of all participants in the study, potentially providing internal informal validation.

CONCLUSION

In the practitioner arm of the CARES survey, HCPs perceived that patients can easily recognize their AR symptoms and can self-manage their disease. Patient history and symptoms and physical examination are the primary methods of AR diagnosis, and most HCPs feel that OTC medication should be tried before Rx medication for AR management. HCPs believe that INSs are considered the gold standard for treatment of AR and have high efficacy and safety.

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