

Original article

Turkish physicians' perception of allergic rhinitis and its impact on asthma

Background: The clinical association of rhinitis and asthma has been recognized for centuries, leading to a current definition of 'one airway, one disease'. Current findings indicate that the optimal treatment of rhinitis might improve coexisting asthma.

Objectives: To evaluate perception of the asthma–rhinitis association and to determine their capability in managing rhinitis.

Methods: Participants of three national asthma meetings, in 2004, were asked to complete a questionnaire which, aside from demographic queries, elicited responses in order to reflect agreement or not with the given statements.

Results: Of the 354 attendees, 220 (62%) responded to the questionnaire. Although over 80% reported good perception of the asthma–rhinitis association, only one-third were examining nasal mucosa of asthmatics, and over 70% believed sinus X-ray, blood eosinophil count, and determination of total serum IgE were required to diagnose allergic rhinitis. Between 20% and 40% of the physicians reported misuse of medications for rhinitis.

Conclusions: This survey documented that the asthma–rhinitis association is generally recognized by physicians treating asthma in Turkey. However, there are certain training needs in terms of attitude towards examinations and appropriate use of laboratories and medications for rhinitis. Improved understanding/management of rhinitis may contribute to asthma care as well as patient satisfaction and adherence to treatment.

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Allergic rhinitis (AR) is a common disease affecting 5–25% of the population and may cause significant social and economic impact if not managed appropriately (1–3). The clinical association of AR and asthma has been recognized for centuries. However, in recent years, the association appears to be stronger than was reported previously, leading to definitions of 'one airway, one disease' and 'allergic rhinobronchitis' (3–6). This concept and its clinical implications were recently the subject of an exhaustive review (7). According to this concept, patients with asthma should be evaluated for rhinitis and patients with persistent AR should therefore be evaluated for asthma. It is suggested that the diagnosis of AR in asthmatics would decrease the treatment requirements and costs for asthma, which might increase patient satisfaction and compliance. Although this concept has been increasingly supported by epidemiological, clinical and laboratory studies, the general perception of physicians, especially those working with asthmatics in primary and secondary healthcare settings, is unknown. Here we report the results of a survey conducted among a group of Turkish physicians who treat asthma to evaluate

their perception of the concept and of rhinitis management.

Material and methods

The study is based on a physician group who attended three national asthma meetings in 2004, which were sponsored and organized by a pharmaceutical company (Merck Sharp & Dohme, Istanbul, Turkey). According to information obtained from company representatives, the participants included physicians who worked with adult and pediatric asthma patients (i.e. those working in an asthma clinic, those for whom asthma drugs constituted the majority of their prescriptions, those known as asthma specialists in their region, and those for whom asthmatics accounted for the majority of their patient spectrum). None of the physicians was informed of the study before the meeting. The company representatives allowed us to distribute the questionnaires at the morning meeting and to collect them at the end of the scientific sessions.

The questionnaire was designed by the investigators and based on the information available in the Allergic Rhinitis and its Impact on Asthma (ARIA) workshop report. The questionnaires were validated on a sample of 20 physicians through 20 in-depth

interviews. The questionnaire aimed at obtaining the following: (i) demographic characteristics of physicians (gender, age, years of experience in medical practice, number of patients per week); (ii) the proportion of physicians evaluating symptoms/signs of AR in asthmatics (nasal obstruction, sneezing, watery rhinorrhea, nasal itching) and symptoms/signs of asthma in patients with AR (cough, breathlessness, wheezing, chest tightness, exercise-induced wheezing); (iii) the diagnostic methods used for AR in addition to history [examination of the nose and thorax, determination of peripheral eosinophil count, nasal smear, skin prick tests (SPT), serum total and specific IgE, sinus X-ray and pulmonary function tests (PFT)]; and (iv) the therapeutic agents (antihistamines, nasal corticosteroids, nasal and systemic decongestants, chromones and leukotriene receptor antagonists) used for treating variable symptoms of AR.

Each physician received an explanatory statement at the beginning of the questionnaire. The questions aside from demographics were prepared as statements to be answered on a 5-point Likert scale, with minimum and maximum scores of 0 and 4 reflecting the physician's practice. The response scale was anchored as: always = 4; often = 3; sometimes = 2; rarely = 1; and never = 0. Respondents were given the opportunity to include comments if they wished to do so. Mean scores above 2 were accepted as agreement, whereas mean scores < 2 were accepted as disagreement.

The designated respondents were assured of the voluntary nature of the survey and of the confidentiality of all survey responses. Because this survey was noninterventional, no ethics committee approval was required. Results were expressed as the percentage of responses to each question. Simple random sample methods were used to calculate 95% confidence intervals. All analyses were performed using the SPSS statistical software version 10.0 (SPSS Inc, Chicago, IL, USA).

Results

Physician population

Of the 423 physicians invited, 354 attended the meetings and 220 (62%) responded to the questionnaire. All were working in urban areas of Turkey. Pulmonologists (45.9%) and pediatricians (35.9%) accounted for the majority of respondents, and 73.2% of respondents were

working in secondary healthcare settings. The characteristics of the study group are summarized in Table 1.

Evaluation of asthmatics for rhinitis and of rhinitics for asthma

Most of the physicians reported that they evaluate their rhinitic patients by questioning each individual symptom of rhinitis, i.e. watery rhinorrhea (99.1%; 97.9–100.0), sneezing (99.1%; 97.9–100.0) and nasal obstruction (96.3%; 93.8–98.8). A slightly lower proportion of physicians (almost 80%) also queried their asthma patients regarding these symptoms, irrespective of the presence of a previous diagnosis of 'allergic rhinitis'. Similar to these ratios, most physicians (above 95%) queried their asthma patients regarding individual asthma symptoms such as breathlessness, wheezing, chest tightness and cough, and almost 90% of the physicians reported investigating these asthma symptoms in their patients with rhinitis. Although majority of physicians (almost one third) reported that 20–40% of their asthmatics have rhinitis problem as well, there was a wide variation between physicians (Fig. 1).

Although chest examination was reported to be carried out by 90.0% (86.0–94.0) of physicians in patients with AR, only 35.0% (28.7–41.3) of the physicians reported performing nasal mucosa examination in their asthmatic patients, which was statistically different from the number performing chest examination in asthmatics ($P = 0.001$). The percentages of physicians who agreed (scores of 4 or 3) with the statements of 'Asthma symptoms in an asthmatic with AR are more severe than in an asthmatic without AR', 'Appropriate treatment of AR improves coexisting asthma', and 'AR should be investigated in all difficult-to-control asthmatics' were 72.7% (66.8–78.6), 87.0% (82.6–91.4) and 82.9% (77.9–87.9) respectively. 94.0% (90.9–97.1) and 85.7% (81.1–90.3) of physicians agreed that asthma and AR, respectively, impaired quality of life.

Table 1. Characteristics of the study population

Characteristics	<i>n</i>
Age* (year)	40.7 ± 0.45
Gender (M/F)	112/108
Years of experience in profession*	15.8 ± 0.5
Total patients/week*	231.6 ± 8.9
Work place <i>n</i> (%)	
Primary center	36 (16.4)
Secondary center	167 (73.2)
Tertiary center	23 (10.4)
Specialty <i>n</i> (%)	
General Practitioner	35 (15.9)
Pediatrician	79 (35.9)
Internal Medicine Specialist	5 (2.3)
Pulmonologist	101 (49.5)

*Mean ± standard error of the mean.

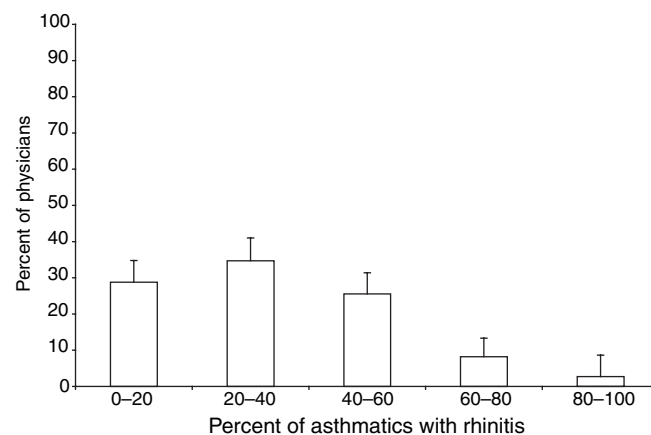


Figure 1. Reported percentage of asthmatics with rhinitis (error bars denote 95% confidence intervals).

Management of allergic rhinitis

In order to diagnose AR, most physicians relied on the following tests: sinus X-ray [82.8% (77.8–87.8)], blood eosinophil count [82.5% (77.5–87.5)], determination of total serum IgE level [71.8% (65.9–77.7)], examination of nasal smear [64.4% (58.1–70.7)] and skin prick test [SPT; 52.9% (46.3–59.5)].

Although more physician [74.5% (68.7–80.3)] were using seasonal/perennial classification compared with intermittent/persistent classification [33.2% (27.0–39.4)], 21.4% (16.0–26.8) of physicians reported that they use both of them. Interestingly, only one-fourth of the physicians reported that they classify severity.

The attempt to document the perception of efficacy profile of medications showed that H1-anti-histamines and nasal corticosteroids were the two groups of drugs most frequently cited for controlling sneezing and pruritus symptoms, whereas for rhinorrhea these were H1-antihistamines and nasal decongestants, and for congestion nasal decongestants and corticosteroids (Fig. 2). Interestingly, almost half of the physicians believed that sneezing can be controlled with nasal decongestants and leukotriene receptor antagonists (LTRA), and nasal obstruction with H1-antihistamines. One-third of physicians believed that pruritus could be controlled with nasal decongestants and LTRA. A combined regimen of H1-antihistamines, nasal corticosteroids and nasal decongestants was used by almost 30% of doctors to treat sneezing and nasal congestion, and by 20% to treat rhinorrhea and itching. LTRA were preferred for at least one symptom of AR in 48.2% (41.6–54.8) of cases.

Discussion

This questionnaire-based survey provides an updated description of knowledge and perception of the asthma–

rhinitis association in Turkish physicians treating asthma and showed that although in most cases, physicians' opinions appeared to be in agreement with the ARIA concept, there are certain deviations from guidelines in terms of patient evaluation and treatment practices in AR. This is the first such study conducted in Turkey and it provides useful insights regarding current beliefs and future training requirements for physicians in the area.

This study was carried out in 2004, 3 years after the establishment of the ARIA concept. During this period, ARIA has been discussed in several national meetings of various societies, and a number of special meetings and publications have focused solely on this new concept. The common belief that the concept has been accepted by the relevant physicians is supported by the results of this study. Although the ARIA concept has been increasingly supported by epidemiological, clinical and laboratory studies, from a therapeutic point of view, it is critical to know that optimal treatment of AR may alleviate coexisting asthma (8–10). For instance, in the study of Crystal-Peters et al. (11), it was shown that those who were treated for AR had a significantly lower risk of subsequent asthma-related events (emergency department visits or hospitalizations) than those who were not treated. Like most chronic diseases, successful control of asthma requires a harmonized approach, and the recently observed suboptimal care in different regions of the world indicates the need for further activities, both to reinforce existing efforts and to implement new initiatives (12, 13). Furthermore, meeting patient needs is likely to achieve better adherence to asthma treatment. In our survey, over 80% of physicians reported questioning their asthmatics and rhinitics for co-morbid rhinitis and asthma, respectively, which is in line with the understanding of the ARIA concept. These statements are further supported by the high rates of agreement to the statements of 'Appropriate treatment of AR alleviates coexisting asthma' and 'AR should be investigated in all difficult-to-control asthmatics'.

Although there was general agreement with the concept, further questioning showed significant deviations from the suggestions in the guidelines in terms of patient-evaluation practice and understanding of the capabilities of certain medications. Guidelines, as well as the ARIA workshop report, usually suggest a standard diagnostic approach for AR including medical history, nasal examination and allergy work-up (skin tests, *in vitro* tests or even nasal challenge) to confirm or exclude an allergic etiology (7). In our survey, only one-third of physicians reported performing nasal mucosa examination. Actually, examination of nasal mucosa is simple and can give clues regarding the presence of AR and help to exclude other causes complicating asthma such as nasal polyps and sinusitis. For ear–nose–throat specialists, nasal examination is a routine practice; in our survey, only physicians treating asthma, i.e. pulmonologists, internal medicine specialists, pediatricians and general

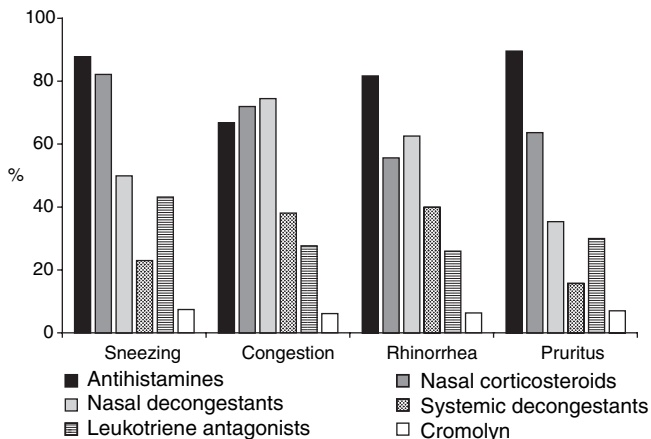


Figure 2. Reported efficacy spectrum of medications.

practitioners, were studied. One reason for these physicians not performing a nasal examination may be their lack of knowledge/experience in this procedure, which points to the need for further training activities.

Another interesting result is the relatively low utilization of allergy work-ups (almost 50%) compared with frequent use (over 70%) of additional laboratory tests, including blood eosinophil count, total serum IgE and sinus X-ray, in diagnosing AR. In actuality, the latter tests are usually considered to have low sensitivity for diagnosis (14). Although it was not documented in the study, we believe that lack of availability and associated cost are some likely causes of the infrequent use of allergy work-up, as shown previously in other developing countries (15). In Turkey, there are no >150 allergists and contact with an allergy unit is often difficult. Furthermore, it is a common opinion among physicians that identification of the allergen does not alter the method of treatment. However, for standardization of AR diagnosis, and to convince the family and patient and reinforce the importance of environmental control measures, an allergy work-up should be done in suspected rhinitic cases (14). The difficulty in contacting an allergy unit may at least partly explain the frequent use of additional laboratory tests for exclusional purposes. In a similar study, Demoly et al. (16) revealed that general practitioners in France ordered additional laboratory tests in only 11.1% of patients with AR, which consisted of measurement of total IgE (6.4%), complete blood count (5.1%), multiallergen screening test (4.7%), and X-rays of sinuses and chest (4.7%).

This study also showed that although the most frequently cited symptoms of each medication group were prescribed appropriately, Turkish physicians sometimes do not use suitable medications. For instance, over half of the physicians reported that sneezing can be controlled with nasal decongestants and LTRA, and nasal obstruction with H1-antihistamines. One of the interesting findings of our study was the high percentage of physicians who recommended topical decongestant for nasal obstruction in AR. Use of topical decongestants was cited at rates of 11.7% and 83% in France and Singapore, respectively (15, 16). The high preference for these agents may be quick symptomatic relief at low cost, which will meet patients' expectations (7). Another notable finding is the use of LTRA in AR – they were preferred for at least one symptom of AR in 48% of cases. At the time of this study, LTRA were not indicated in the treatment of AR in Turkey and also, the drug company had not yet advertized their use for this new indication. Philip et al. (17) demonstrated that montelukast (10 mg administered once daily for 2 week during spring allergy season) produced significant improvements compared with placebo in the daytime nasal (congestion, rhinorrhea, pruritus and sneezing) and

night-time symptoms score among patients with seasonal AR. ARIA guidelines also state that LTRA are well-tolerated and may be useful when used alone or in combination with antihistamines. However, there is a lack of data on the efficacy of antileukotrienes in AR; more studies are required before exact recommendations can be given (7, 18). Nevertheless, given the frequent coexistence and shared pathophysiologies of asthma and AR, LTRA may be a rational approach to 'one airway' disease management (19). The high frequency of use of this drug may be attributed to the attempt to jointly control AR and asthma symptoms, to the safety profile, and to the efficacy of the drug on AR symptoms as observed by physicians.

There are certain limitations to this study, the most relevant of which is perhaps that of self-reported data, which as described previously can include overestimation, probably resulting from a desire to please (20). Cultural factors may play a role, but 'being selective with the truth' is seen uniformly worldwide. We believe that the high rate of agreement with the concept and the low rate of difficulty in diagnosing AR reported by our physicians may have been affected by some degree of inaccuracy. Furthermore, the results of our survey are limited in reflecting the general trends of the country since most physicians were based in urban areas. Considering the overloaded outpatient clinics and low level of healthcare facilities in rural areas, inclusion of rural areas would in the least result in a lower level of appropriate practice.

In conclusion, this survey provides some insights into the perceptions of Turkish physicians who treat asthma by highlighting that the concept of 'one airway, one disease' has become prevalent. However, it also documents that patient evaluation and treatment practices may not always be consistent with the guidelines, indicating the need for further education and training. Improved management of rhinitis may contribute to asthma care at least with regard to patient satisfaction and adherence to treatment.

Author contributions

E. Civelek had primary responsibility for field study and data analysis, and participated in manuscript preparation, protocol development and outcome assessment. O.U. Soyer had primary responsibility for manuscript preparation with B.E. Sekerel and participated in data analysis and outcome assessment. B. Gemicioglu contributed to field study and manuscript preparation. B.E. Sekerel had primary responsibility for protocol development and outcome assessment, prepared the manuscript with O.U. Soyer and participated in preliminary data analysis.

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