

A Survey on the Attitude of Yerevan Otorhinolaryngologists towards the
Significance of Allergic Rhinitis and Its Current Treatment Strategy

Master of Public Health Thesis Project Utilizing Professional Publication Framework

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EXECUTIVE SUMMARY

The goal: to assess the attitude of otorhinolaryngologists towards the allergic rhinitis.

The objectives: to assess the attitude of otorhinolaryngologists towards the prevalence of allergic rhinitis in Armenia, its impact on the health and on the quality of life of the patient, its complications and possible preventive methods; to assess the current treatment strategies including the collaboration with allergists and the follow-up; and to find out the possible barriers to get proper treatment.

Design: qualitative study, in-depth interviews.

Setting: the otorhinolaryngological departments of four hospitals and four district polyclinics in Yerevan.

Participants: 21 otorhinolaryngologists.

Results: The participants were concerned about the increasing prevalence of allergic rhinitis in Armenia. However, there was a misunderstanding in distinguishing between allergic and non-allergic rhinitis affecting the quality of the treatment. The majority considered allergic rhinitis not a severe disease. There was no consistency in the treatment strategies and none knew about any guideline. The major concern for the treatment was the financial affordability of patients. Lack of finance was considered the main potential barrier for the first visits, and patient's awareness and the education level were defined as the key factors for the follow-up visits to the physician.

Conclusion: Financial affordability of patients restricted the practical abilities of otorhinolaryngologists in treatment of allergic rhinitis and impacted on the quality of the treatment. The unavailability of recent literature and internet resources for the majority of specialists resulted in a lack of appropriate knowledge and attitude toward the allergic rhinitis. Nonetheless, adopting the existing WHO guidelines for low income countries could help to improve the quality of care of allergic rhinitis and to encourage continuing education among the specialists.

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INTRODUCTION

Allergies are the world's sixth most prevalent chronic condition (1). Allergic rhinitis, being one type of allergy, is a very common condition and is believed to complicate the lives of as many as 40 millions adults and children worldwide (1). Although allergic rhinitis is usually not a severe disease, it alters the social life of patients and affects school performance and work productivity. Moreover, the monetary costs incurred by rhinitis are substantial (2). Surveys indicate a prevalence of about 10-20% in the general population worldwide (3,4). However, general practice based morbidity surveys in England find a much lower overall prevalence of allergic rhinitis of about 2% (5). One reason for low prevalence may be that many people perceive their symptoms not to be severe enough to consult a physician. Allergic rhinitis is most prevalent during the school-age years. Evidence is emerging that the prevalence of allergic rhinitis, as with many other allergic conditions, is increasing (6). Three morbidity surveys of general practices in England and Wales found that the prevalence increased from 5/1000 population in 1955-1956 to 11/1000 in 1970-1971 and to 20/1000 in 1981-1982 (5).

LITERATURE REVIEW

Allergic rhinitis is clinically defined as a symptomatic disorder of the nose induced by an immunoglobulin-E-mediated inflammation after exposure the membranes of the nose to allergens (2). Following exposure to an allergen, histamine and other inflammatory mediators are released from mast cells in the nasal mucosa. These act on cells, nerve endings, and blood vessels to produce the acute symptoms of allergic rhinitis. Inflammatory cells then migrate to the nasal mucosa, making it more sensitive to allergens and non-specific stimuli. Non-specific nasal hyperreactivity is an important feature of allergic rhinitis.

CLASSIFICATION

A new international classification for allergic rhinitis has recently been proposed (2). Previously, allergic rhinitis was described as seasonal, perennial, or occupational. The new classification is based on the prevalence, impact on the quality of life, impact on work/school

performance and productivity, economic burden, links with asthma, and association with sinusitis and other co-morbidities such as conjunctivitis (2). According to the duration of symptoms they are subdivided as being either intermittent or persistent. By the severity of symptoms and effect on quality of life they are classified as mild or moderate-severe (2). Intermittent rhinitis occurs less than for 4 days per week, or less than for 4 weeks; persistent occurs more than for 4 days per week and for more than 4 weeks. Mild rhinitis includes all of the following: normal sleep, normal daily activities, sport, leisure, normal work and school, symptoms not troublesome. The moderate type includes one or more of the following: abnormal sleep, impairment of daily activities, sport, and leisure, problems caused at work or school, and troublesome symptoms.

The most common **symptoms** are sneezing, nasal blockage, rhinorrhoea, and an itchy nose. Other symptoms include itching of eyes and throat, impaired sense of smell, headache, and facial pain.

TRIGGERS

The allergens of intermittent allergic rhinitis (seasonal allergic rhinitis or hay fever) include pollens (tree pollen in springtime, grass and weed pollen during the summer) and mold spores (during the late summer and autumn months). Persistent allergic rhinitis (perennial allergic rhinitis) is most commonly due to hypersensitivity to house-dust mite and domestic pets. There is increasing evidence that rhinitis is exacerbated by pollutants, in particular tobacco smoke and car emissions (2,3,7). Indoor air pollution is of great importance since people in industrialized countries spend over 80% of their time indoors (2). Indoor pollution includes domestic allergens and indoor gas pollutants, among which tobacco smoke is the major source. In many countries, urban-type pollution is primarily of automobile origin and the principal atmospheric pollutants include ozone, oxides of nitrogen and sulphur dioxide, and particulates. These may be involved in the aggravation of nasal symptoms in patients with either allergic

rhinitis, or, in non-allergic subjects. Diesel exhaust may enhance the formation of IgE and allergic inflammation (2).

The **diagnosis** of allergic rhinitis is based on a typical history of allergic symptoms, diagnostic hypersensitivity skin tests, the measurement of allergen-specific IgE in serum, and nasal challenge tests with allergens (2).

COMPLICATIONS

Allergic rhinitis is underestimated as a cause of suffering and impaired quality of life. A survey of adults with allergic rhinitis found that symptoms adversely affected work, home, and social life in over 30% of people (4). In children, poorly controlled symptoms may contribute to learning problems and sleep disturbance (2,3). Allergic rhinitis is associated with and is also a risk factor for asthma (2). Other co-morbidities include sinusitis and conjunctivitis (2). The associations between allergic rhinitis, nasal polyposis and otitis media are less well understood (2).

PROGNOSIS

The symptoms of many people with seasonal allergic rhinitis improve over time. Studies have reported spontaneous “cure” rates of 10-20% and improvement rates of 40-65% over 5-23 years of follow-up (8).

MANAGEMENT

There are different management tools and guidelines in treating the allergic rhinitis throughout the world. The “Prodigy Guidance- Allergic Rhinitis” (2002) offers guidance to cover the management of allergic rhinitis (9). The goals and the objectives of the guidance are: to advise on allergen avoidance, to alleviate symptoms, and to counsel on the use of systemic corticosteroids for severe symptoms (9). Another guideline was created by the Southwestern Medical Center (10), the goal of which was to direct clinicians toward the proper identification of allergic rhinitis and the initiation of optimal management strategies. The Allergic Rhinitis and its Impact on Asthma (ARIA) initiative has been developed in collaboration with the World

Health Organization (WHO) (2). This document is intended to be a state-of-the-art pocket guide for the specialist as well as for the general practitioner. It aims to

- update clinicians' knowledge of allergic rhinitis
- highlight the impact of allergic rhinitis on asthma
- provide an evidence-based approach to diagnosis
- provide an evidence-based approach to treatment
- provide a stepwise approach to the management of the disease (2).

Generally, the guidelines contain background information including the classification, triggers, co-morbidities along with the diagnostic assessment and the treatment. According to the ARIA guideline, allergen avoidance is recommended for anyone with allergic rhinitis (2). The treatment recommendations include medications, specific immunotherapy, education and surgery. Moreover, the recommendations are evidence-based: based on randomized-controlled trials carried out on studies performed with the previous classification of rhinitis. Guidelines for recognizing and diagnosing asthma have been published by the Global Initiative for Asthma (GINA) and are recommended by ARIA. In developing countries, a specific strategy may be needed depending on available treatments and interventions, and their cost; adapted guidelines for use in low income countries have been created (2).

Based on the clinical description, it can be assumed that the allergic rhinitis is a public health problem that needs organized primary and secondary prevention and stepwise treatment. The efficient treatment of allergic rhinitis can be accomplished following one of the guidelines for its management. The recognition of these guidelines by specialists of otorhinolaryngology and their own attitude towards the allergic rhinitis is a major factor for dealing with this problem. The treatment might not be effective if specialists do not treat allergic rhinitis as a serious problem and do not follow the clinical recommendations. Moreover, in the world, especially in low income countries such as Armenia, efficient treatment is important and the adapted guidelines for developing countries can be of major benefit. For that reason it is important to

assess what is the current situation in Armenia with regard to how the otorhinolaryngologists treat this condition, what they think, what is their attitude, and what the potential barriers to getting proper treatment are. Thereafter, further improvements in allergic rhinitis management can be done based on these data.

When researchers are interested in what people feel, think, or know about certain issue they often use the tools of qualitative research (11,12). The results of qualitative surveys presented below although do not relate directly to allergic rhinitis, they talk about one of its complications (asthma) and potential barriers to treatment. A qualitative study was conducted on views of health professionals and patients on guided self management plans for asthma in South Wales (13). The objectives were to explore the views held by general practitioners, practice nurses, and patients about the role of guided self management plans in asthma care. It was found that neither health professionals nor patients were enthusiastic about guided self management plans, and, although for different reasons, almost all participants were ambivalent about their usefulness or relevance. The conclusion of the study was that attempts to introduce self guided management plans in primary care were unlikely to be successful. A more patient centered, patient negotiated plan is needed for asthma care in the community (13). Another qualitative study was conducted to investigate the perspectives of patients with asthma on the use of an action plan (the sequence of actions the patient should do) and the implementation of this plan during an asthma attack that culminated in a visit to an emergency department (14). The study was conducted in a tertiary teaching hospital, a suburban hospital, and a rural hospital and included a total of 62 patients who came to an emergency department with asthma over a two month period. It was found out that patients viewed action plans positively: participants modified their prescribed plan according to their experience with asthma. The conclusion was that for facilitating the implementation of a prescribed action plan, doctors need to acknowledge and include the patient's personal experience of their disease (14).

Qualitative studies were conducted also in Northeast England to determine barriers against the treatment and diagnosing of the heart failure in primary care (15). The objective was to ascertain the beliefs, current practices, and decision making of general practitioners in the diagnosis and management of suspected heart failure in primary care, with a view to identifying barriers to good care (15).

No data exist in Armenia about current treatment strategies against allergic rhinitis, as no study has been conducted to assess the attitude and awareness of the specialists of otorhinolaryngology towards the allergic rhinitis. Therefore, a study to fill the research gap in this field is indicated with a qualitative study being the first step to initiate the investigation.

METHODS AND DESIGN

A qualitative study was conducted in hospitals and district polyclinics of Yerevan. The **goal** of the research was to assess the attitude of otorhinolaryngologists towards allergic rhinitis and identify the current treatment strategies and potential barriers to getting treatment.

OBJECTIVES

1. *To assess the attitude of otorhinolaryngologists towards the*

- prevalence of the allergic rhinitis in Armenia
- impact of allergic rhinitis on the health of the patient
- impact of allergic rhinitis on the quality of life of the patient
- complications of allergic rhinitis
- possible preventive methods against the complications

2. *To assess the current treatment strategies*

- individual approaches towards the treatment of allergic rhinitis
- collaboration with allergists
- follow-up of the patient

3. *To determine the possible barriers for the treatment and the follow- up of the disease*

RATIONALE FOR THE METHOD

To meet the research objectives a qualitative study was the preferred design, because it has inductive reasoning, could generate hypotheses and generally explores attitude and belief (13).

METHOD

In depth interviews were used to conduct this qualitative study. The semi-structured moderator's field guide was the instrument. The guide included topics with questions developed based on the objectives of the research. They were discussed with a specialist otorhinolaryngologist. The topics included attitude, treatment strategies, and barriers to getting proper treatment for allergic rhinitis. The instrument was pretested among three residents in otorhinolaryngology, and thereafter some of the questions were revised.

SAMPLING

The target population included specialists of otorhinolaryngology working in Yerevan hospitals and district polyclinics. The sample size was 21, because of the limited number of interviewers (one person), time constrains, and also as many different answers were provided by the participants. The inclusion criteria were being a specialist of otorhinolaryngology and working in Yerevan hospitals or district polyclinics. The rationale for choosing otorhinolaryngologist and not allergist was that patients with allergic rhinitis mostly visited to otorhinolaryngologists and not to an allergist in Armenia. The reason for this could be the main symptom bothering the patient, which was the difficulty with nasal breathing. The exclusion criterion was being a pediatrician; according to newly released treatment guidelines for allergic rhinitis, developed by the Office of Continuing Medical Education, children, the elderly, athletes and pregnant women were identified as groups requiring different management and care.

Fifteen in-depth interviews were conducted in 4 hospitals and 6 in 4 district polyclinics. During the first stage, the departments of otorhinolaryngology in hospitals and polyclinics were sampled by convenience. During the second stage, the specialists of otorhinolaryngology were sampled randomly from the list of the employees (table 1, table 2).

During the interviews, the interviewer asked questions according to topics. The questions were open-ended. The interviewees were leading the conversation and they could diverge from the questions asked. The interviewer employed probing questions to make the interviewees talk freely about the issue of interest and expand on their ideas and thoughts. The expanded field notes were translated into English.

The materials used were paper and pencils. The interviewer was the student-investigator.

RESULTS

Most of the informants were pleased to participate in such a study; very few of them were concerned about anonymity. A written consent form was provided. However, of 21 participants only one read it before signing.

ATTITUDE

Attitude towards the prevalence of allergic rhinitis in Armenia

The question asked was: What do you think about the prevalence of allergic rhinitis in Armenia? Most of the respondents mentioned that it was a very common and a spreading condition, especially compared with the past years. They were concerned about the high prevalence of allergic rhinitis almost all mentioning that the tendency was growing. One of the interviewees pointed out that his assumption was based on his own experience, and the other mentioned that his statement was based on statistical data. However, he did not present any written confirmation or mentioned the source of those data.

“They are very common...especially during the last years...”

“They are common, very common!!!... Even among the children even fewer than one year old children ...well, allergic rhinitis is spread mostly among the young people...”

“Yes, mm, it is spread very much, and the numbers and the prevalence will increase in the future...that is the statistical data ...”

The interviewees also tried to explain the reason for the increasing and high prevalence of allergic rhinitis in Armenia. Among the explanations mentioned was the diverse flora of Armenia, the contamination of the environment, food brought from abroad, and chemicals and drugs used in the population. The “nitrates” in the food as a cause of increase of the prevalence

of allergic rhinitis was frequently mentioned. One of the respondents was very much concerned about the “naftizine” (vasoconstrictor nasal drop) being the major cause of the high prevalence of allergic rhinitis. One of them stated that the reason among newborns was the “unnecessary vaccination of the parents during the pregnancy.” However, she failed to explain her statement clearly. Another noticed that when the cause of the symptoms was not possible to find, allergic rhinitis was diagnosed. Among the explanations were also suppression of immune system and stress. One answer included the Iraq war as a reason for increase in the prevalence. Single response included “vaccinations” as a common cause of sensitizing the body and triggering the allergic rhinitis.

“Connected with the stresses, the decrease of the immune activity, I think... the nitrates in the food... yes; the nitrates increase the allergic background”

“As you know Armenia is like an endemic zone for allergic rhinitis, especially in Yerevan... “the good air”, the climate, it is continental type, with cold winters and hot summers, and during the last years the contaminated air...”

“Especially it is connected with the rich flora of Armenia, the weather is dry, the dust of the flowers, the smells”

“It is connected with the foreign food which is brought to Armenia... I don’t know what do they use, the medications ...”

“The different drugs people take what drugs... (with interrogative look), they even do not know”

“Well, the naftizine is a real cause of the allergic rhinitis”

However, there was a respondent who mentioned that allergic rhinitis was not very common. Whereas another said that during the last few years the number of cases of allergic rhinitis had decreased. The first explained his statement mentioning that allergic rhinitis mostly was met in form of vasomotor rhinitis (a type of noninfectious rhinitis). The second said that the visits to doctors had decreased, and the population in Armenia had declined.

Attitude towards the impact of allergic rhinitis on the health of the patient

The question asked was: What do you think about the impact of the allergic rhinitis on the health of the patient? The answers ranged from just an “unpleasant condition” to “serious” and “hard” impact. It was important that some of the respondents were confusing the impact on health with the complications of the disease, and one even began just to list the symptoms.

However, after clarification the majority answered that the allergic rhinitis adversely impacted patients' health, but the impact was not life-threatening. A very frequent explanation was "difficult nasal breathing" and, consequently, "hypoxia" (declined level of oxygen in the blood) and its later impact on the whole body. Almost all included "headache" along with "memory loss" and "heart problems" connected with the disease. One answer stated that the patient just was "stuck on his disease," meaning that the patient always was concerned with his disease. Interesting answers were "unbearable" nervous system of the patient, changes in mood, and just "unpleasant atmosphere at home."

"Well, you know, allergic rhinitis affect the health, first of all, difficult nasal breathing, hypoxia..."

"It impacts the health, of course not life threatening, but always sneezing, runny nose, of course the patient will have discomfort, he can not breathe, he later develops headache...it is unpleasant..."

"Well, it affects negatively, and the nervous system, it becomes unbearable...nothing else, but it is serious..."

"First of all the subjective feelings of the patient, it is displeasing, of course it is not dangerous for the life, just it is very unpleasant, the nose is blocked..."

Nevertheless, among the answers there were a few mentioning that it was a serious problem. One of them stated that the patient might even asphyxiate, and another answered that recently "allergic polyarthritis" could frequently develop as a result of allergic rhinitis. Woman infertility was also mentioned as a consequence. The latter provided an example of the patient who could not have a child, and only after the treatment of allergic rhinitis she became pregnant.

"The process may continue in the whole body, including allergic polyarthritis, it is very common recently."

"And in the acute stages the oxygen deficiency will develop, and the whole body will suffer, the immunobiologic changes occur in the body, and the predisposing background for other diseases will be created in the body."

Attitude towards the impact of allergic rhinitis on the quality of life of the patient

The question asked was: In your opinion, how may the allergic rhinitis affect the quality of life of the patient? Generally, the respondents emphasized the effect of the allergic rhinitis on the quality of life. Moreover, few of them mentioned the effect of allergic rhinitis on the quality of life before the appropriate question was asked. To the probing question about the explanation

of the condition on quality of life none was able to answer. Instead, they tried to explain by mentioning examples. Among the examples mentioned was decreased “working capacity.” One interviewee also explained that if the patient was chronically ill with allergic rhinitis, his career would suffer, and this would be reflected on his/her quality of life. Most of them included in their answers “bad mood,” “headaches” as an example of affected quality of life. Some of them explained in details how the patient with characteristic symptoms “avoid the outside environment,” even bringing citations from the patients: “I avoid socializing” or “it is a shame for me to come out from home with a handkerchief in my hands.” Very often the patients’ “declined nervous system” and psychic status was mentioned. There were few answers including “multiple surgical interventions” among the patients with allergic rhinitis, which affected the quality of life. Only one of the respondents mentioned that “sexual life suffered.” Another interesting statement was that patients with allergic rhinitis were always discontent from the life and from medicine.

“He breaths hard, he is nervous and peeved, working capacity declines, psychic status declines...wow, we have a patient with allergic rhinitis (laughing), and his psychic is definitely not ok...”

“Of course the allergic rhinitis affect the quality of life, they become passive, indifferent, they avoid people...every time sneezing, clearing the nose..., they are depressed.”

“Well, if always there is a runny nose, sneezing, the patient will be “stinking” ... similar to the “gastritis mood”, there is “allergic rhinitis mood.”

However, there were respondents who just confirmed the effect of the allergic rhinitis on the quality of life and even after some probing questions did not explain it.

Attitude towards the complications of allergic rhinitis

The question asked to reveal appropriate answers was: “What do you think about the complications of allergic rhinitis?” The range of answers varied widely. Some of the respondents noted that the last questions had already covered the complications, because they were the same, and they did not add anything else. However, the majority listed a set of complications of allergic rhinitis. The most frequent responses included “sinusitis” and

“haimoritis” (inflammation of paranasal sinuses). The next frequent answers were “asthma” and “nasal polyps.” Few answers included “otitis” (inflammation of the middle ear).

“Bronchial asthma, ethmoidal polyps, if not appropriately treated...”

“The sinusitis, asthma, otitis, for example, patients with otitis almost always have some allergic condition in the nose...”

“Well, polyposis that is the most important, because as it develops you will later need several surgeries, ineffective...then there may be haimoritis...”

“Rhinosinusitis... the polyposis of the nose, rhinosinusitis, those are the next stages of the development of allergic rhinitis, asthma...”

However, there were several respondents repeating just the impact on the quality of life and the impact on the health of patient as complications. These answers included “feebleness,” “instable nervous system,” “headaches,” and “tiredness.”

“Well, those are already the complications, added neurological diseases, not stable neurological status, the appetite will decrease as well, can not contact normally, the patient himself will feel bad...”

Only one respondent mentioned infectious diseases, such as “infectious sinusitis,” “meningitis,” and “sepsis” as a complication of allergic rhinitis. One interviewee just stated that he had not met any complications in his practice.

Attitude towards the possible preventive methods against the complications

The question asked was: “How can the complications be prevented?” The most frequent answer was the treatment of the allergic rhinitis with different drugs and methods, such as nasal injections, ultrasound disintegration, and conchotomy (removal of concha). Only a few of the respondents differentiated primary prevention of development of hypersensitivity with prevention of the complications. However, those respondents stated that prevention of allergic rhinitis was not possible. But they tried to give some methods, like “training the body,” “avoidance of the allergen,” and “climate changing,” which they were advising their patients. A few respondents also mentioned about preventive approach, treatment on time before the occurrence of symptoms and before the allergy season. Furthermore, there were answers emphasizing allergic tests to find out the allergens. One of the respondents also emphasized the importance of “environment supervision,” “spreading light on this disease” by advertisements,

and “telling the population about the nitrates.” There was an answer stressing only the importance of “cleaning the stomach” to see if the allergen was in the consumed food.

“Antihistamine medications, reflexotherapy, the training the body, local treatment-nasal sprays, washes, physiotherapy.”

“To find out the allergen in the food or air, a patient should avoid it, also general desensibilising drugs, kestin, recently we use it, and it is very effective.”

ASSESSMENT OF CURRENT TREATMENT STRATEGIES

Approaches towards the treatment of allergic rhinitis

To define the different approaches to the treatment of allergic rhinitis used by the specialists, the following question was asked: “Tell me please in details how you treat your patients with allergic rhinitis?” There was a variety of different approaches, including from just a list of medications to a detailed explanation of the treatment strategy. The participants listed medications mostly by names, and only a few of them differentiated medications by the classes of drugs. Among the medications listed by the respondents, “flixonase,” “kestin,” “claritine,” and “tavegil” were most frequently mentioned. Almost all mentioned antihistamines, local vasoconstrictors, and local corticosteroids as basic classes of drugs for the treatment of allergic rhinitis. They also gave examples of different ways of applying medication. Few answers included Vitamin C and “reflexotherapy,” and only one mentioned “nasal washes with saline water.” However, there were few answers including the general use of corticosteroids.

“Well, as I said it should be multifaceted treatment: antiallergic, antihistamines, it should be injected by local procedures (nasal drops-corticosteroids, flixonase,) and plus general desensitizing therapy...”

Almost every one mentioned surgical interventions. Among this group the most frequent was “ultrasound disintegration” combined with “antihistamines,” and only few of them answered “conchotomy.” One participant recognized the ineffectiveness of the “conchotomy” and “ultrasound disintegration” among most patients but did not deny the use of these methods in the practice. One response differentiated the treatment on the basis of the type of the allergic rhinitis. In case of seasonal type, he suggested medications and noted ineffectiveness of surgical intervention. Some of the respondents emphasized the necessity of surgical intervention only in

cases with complications. A few descriptions of treatments began with determining and avoiding the allergen, and only one mentioned that he inquired the patient about the recent treatments and possible allergens. Unique answers emphasized the importance of “raising the resistance of the body” and “training the body” as a first step in the treatment, and the surgery for the eliminating the outcome of the allergic rhinitis, such as deviation of nasal septum. Yet another stratified the treatment approaches based on the availability and affordability for the patient.

“Well, for the general treatment to raise the overall resistance of the body, the patient also should train himself, go for summer vacations, be on the beach, and take the existent drugs...”

“The first step is the allergen... the next is the drugs-diasolin, kestin, physiotherapy, electrophoresis of the corticosteroids..., and then if the nasal pathways are blocked I sent to the surgeon, Ultrasound disintegration, also if there are already the complications, only after the rhinitis is treated we send to the surgeon.”

However, some of them just showed their ignorance, stating that there is no treatment, and even if there is, either the patients are discontent or the treatment is ineffective. Two of the respondents said that they did not treat the disease; they just tried to eliminate the symptoms. And one interviewee said that the “patient becomes a probing zone,” meaning that they tried all the possible approaches.

Collaboration with allergists

To explore this possibility the question asked was “How do you collaborate with allergists?” The answers to this question could be separated into two parts: what they thought and what they did. The vast majority of participants agreed that it was necessary to collaborate with allergists. Most of the answers emphasized the importance of identifying the allergen. A few mentioned that these tests were “very expensive,” and even “ineffective,” some of them brought examples from Europe where allergist and otorhinolaryngologist were combined into one specialty. One answer explained the necessity of identifying the allergy towards the antibiotics only. Among the explanations of the importance of the collaboration was that

otorhinolaryngologists just eliminated the local symptoms; the visit to allergist should be the first step for the treatment.

“It depends on the finance, but however, the patients should visit the allergist” “It should be a complex treatment with an allergist. But, unfortunately, allergens can rarely be found and excluded.”

Although the majority responded positively about their collaboration with an allergist, none could confirm his statement with examples after the probing. The only thing that was common was that they had experience of working with allergists but it was not effective, and very rarely was the allergen identified. Moreover, they emphasized that the tests were expensive so some patients refused to be referred to an allergist. For treatment, the majority mentioned that they tried to deal with the problem themselves; a frequent explanation for this was that they did not know “any allergist” in Armenia. However, there were a few respondents undeniably stating their successful experience with allergists.

*“Yes, but it does not help well”
“...To say the truth I do not, and the reason is that I do not know any allergist working with allergic rhinitis”
“Well, I have had few experiences, but very ineffective, also all the tests are expensive, and the same treatment, no it is not effective...”*

The follow-up of the patient

To explore the follow-up of their patients the question asked was: “How do you follow up your patients with allergic rhinitis after the treatment?” Almost everyone answered that they kept contact with their patients. Some of them said that they gave the phone number. Each of those answers explained that the patients called them especially if something was wrong. Furthermore, the patients just visited them, even “disturbed” them if, again, there was any problem with their health. The most frequent statement was that the patients did not follow-up if they felt well, and, very rare, because of lack of money. However, there were answers including valuing and believing in doctors, the “intellectual status of the patient,” and the doctor attitude to the patient, adversely impacting the follow-up. Only a few of the respondents said that there was a “dispensary supervision” of this kind of patients, and the patients visited once or twice in a year.

“They call rather often, especially if there is a problem...”

“Well, they come, of course they should come, and by the way, if something is wrong he will necessarily refer again...”

“Well, in our hospital such kind of patients is like in Soviet time, under the dispensary supervision, beginning in the spring till the autumn...”

Only one respondent said there was no contact. Although he asked them to come, he never made them because of the expenses connected with each visit.

“There is no contact, no, you cannot make him to come every time, and they have to pay money for the consultation...”

POSSIBLE BARRIERS FOR THE TREATMENT AND THE FOLLOW-UP OF THE DISEASE

To investigate the potential barriers the following question was asked: “In your opinion, what barriers do the patients face for the first visit, treatment, and the follow-up of their disease?” Almost everyone included “financial” difficulties, “social status,” and “lack of money” in their responses. Frequent answers included also lack of patient “education” and “conscientiousness” as main barriers. There was also mentioned “lack of information”; even more, one respondent stressed the importance to educate the patients about the seriousness of this disease. Several answers included ineffectiveness of the treatment, patient’s dissatisfaction with the treatment, and “fear towards the hospitals” as reasons for not visiting a doctor or not going for a follow-up visit. Only a few respondents along with other reasons mentioned the doctors’ function in the follow-up.

“The first and the most common is the financial...”

“First of all, the finance, intelligence, lack of information.”

“Well, the indifferent attitude towards themselves, not serious, and of course the money.”

“The only one is the financial problem, also the lack of information, knowledge about the seriousness of the complications of this disease...they do not know anything, the patients should read about it, agitation should be about the problem on TV, even the patients often do not know that allergic rhinitis is a otorhinolaryngological disease...”

However, there was a unique answer explaining that the patients with allergic rhinitis would visit a doctor regardless of any possible barrier and that there was no need to be concerned about it.

DISCUSSION

The results indicated that almost all the respondents were concerned about the increasing prevalence of allergic rhinitis in Armenia. However, the majority of answers were based only on their own experience; only one of them was based on a reference, which was unavailable. The contaminated environment was mentioned as one of the causes for increase in the prevalence of allergic rhinitis, but none of the specialists specified tobacco smoke or car exhausts (2,3,7). Mainly mentioned “nitrates,” as one of the triggers of allergic rhinitis, caused non-allergic rhinitis according to the literature (14). “Naftizine,” specified as a cause of allergic rhinitis, in reality, caused rhinitis medicamentosa (15). It followed that most of the otorhinolaryngologists were confusing the allergic rhinitis and different types of non-allergic rhinitis. Consequently, the treatment would be the same for the allergic and non-allergic rhinitis, and, of course, would be ineffective. Unfortunately, only one specialist stressed the misdiagnosing of different types of rhinitis as a reason for the increase in the prevalence of allergic rhinitis. Thus, there was a misunderstanding of differences between allergic and non-allergic rhinitis among the specialists and this was reflected in the treatment strategies.

Attitudes towards the seriousness of the allergic rhinitis were confused with the complications. However, allergic rhinitis was considered not a severe disease, which was consistent with the ARIA guideline (2). They considered a problem serious if it was life threatening. Even if the seriousness was mentioned, information from appropriate literature was not provided. Only their own experience was used to answer the questions. However, there was a good understanding of the development of the allergic rhinitis and its pathophysiology. Only a few participants mentioned the impact of the allergic rhinitis on the quality of life while discussing the impact on the health of the patient. The most of the participants just answered positively the question about the impact on the quality of life; the possible explanation could be that participants did not clearly understand the term “quality of life.” The definition of the term “quality of life” was not provided, and none of the participants could clearly explain what they meant saying it. The survey showed that the source of defining the “quality of life” was their

own judgment and not any literature. The allergic rhinitis and its influence on the quality of life were considered important, although there was no clarity about the understanding of the term itself among the participants.

The fact that very few magazines, books or booklets were observed on the tables and shelves of the participants during most of the interviews could speak about unavailability of the recent literature or ignorance of the literature among them.

The study revealed that there was a general good understanding of the complications, asthma, sinusitis, and otitis, which was consistent to the literature (2). However, it was disturbing that there were responses, which did not mention any of these complications or even mentioned that he/she did not observe any of them in their practice. The explanation could be either they had a small number of patients or lacked the appropriate knowledge. The role of preventive methods, such as avoiding the allergen was underestimated. The reason for this could be either the difficulties determining allergens at least in their practice or lack of knowledge about any guidelines and giving less importance to these preventive measures rather than to the drug treatments. According to the literature, environmental control and allergen avoidance, such as staying inside, isolation of pets, allergen-proof encasements of pillows, mattress, and carpet removal, are the cornerstones of management of allergic rhinitis (10). Although it is usually not possible to avoid allergens completely, reducing exposure may reduce the severity of symptoms and the need for drug treatment (3,7,19). Unfortunately none of the participants cited any of these methods which did not create a financial burden for the patient.

Misclassification of the allergic and non- allergic rhinitis by some specialists became noticeable, when one of them recommended stomach washing as the main preventive method against the allergic rhinitis. (The food can not cause allergic rhinitis; it can cause type of non-allergic rhinitis). Those suggesting an information campaign about the problem on TV and educating the patients, were not the majority, but might have a good understanding about the allergic rhinitis as a public health problem. One of the reasons could be their familiarity with the

recent literature or access to internet resources. Unfortunately this aspect was not included in the survey.

The results of the treatment strategies suggested that there was not a single general approach towards the management of allergic rhinitis. It was observed that the main concern for the selection of treatment was financial affordability for patients. This finding was consistent with the ARIA recommendations for the low income countries (2). In developing countries the management of rhinitis should be based on medication affordability and availability, and the rationale for treatment choice should be based upon the level of efficacy, low drug cost affordable for the majority of patients, and inclusion in the WHO essential list of drugs (2). Also a stepwise treatment is proposed according to the new classification of allergic rhinitis (2). Only one physician differentiated the approaches based on the type of allergic rhinitis (seasonal and perennial) and the existence of complications, but it was not consistent with the steps provided in any guideline. According to clinical practice guideline, the general approach to the management of allergic rhinitis begins with allergen avoidance and continues with the use of various over-the-counter and prescription medications (10). If allergen avoidance and environmental control alone do not alleviate symptoms, medications may be indicated according to an algorithm similar to that proposed for asthma management. Patients may be characterized as having mild intermittent, mild persistent, moderate persistent, or severe persistent allergic rhinitis and treated accordingly (10).

Although the majority was concerned with the cost of the medications, it was surprising that only one mentioned nasal washes by saline water, which was considered effective (2) and not causing financial burden for the patient. During the listing of the names of drugs, none was concerned with their side effects, despite dealing with hormone based medication. Generally the drugs were modern, and some common drugs were mentioned. The reason could be drug advertising companies visiting the hospitals.

The physicians were also explaining in details different ways of drug injections, also giving the rationale for each. It might be explained that the majority of the physicians mostly were concerned with their practice and, especially, with effective treatment of the patient rather than with continuing education, innovation of their skills, and implementation of preventive measures.

In terms of surgical interventions, general caution and vigilance was observed, trying to appeal the least destructive methods.

Collaboration with allergists was considered to be a necessary part for the treatment of allergic rhinitis. Unfortunately, the practical implementation was not real because of the expensive and not effective methods used in Armenia. Based on the WHO guideline, immunotherapy is not usually recommended in the developing countries because many allergens are not well identified and specialists must prescribe desensitization (2). A competent way to deal with this problem was suggested by the respondents: to combine allergology and otorhinolaryngology into one specialty, which was based on some European models. It was clear that the respondents did not collaborate with allergists, and they tried to solve the problem by themselves. Furthermore, they were aware what was going on in the western countries and were open for presentation of alternative methods in their practice.

The results of the follow-up of the patients after the first visit to doctor showed that it was not the physicians who were concerned with the follow-up but the patients; the patients necessarily visited again a physician if there was something wrong after the treatment, and, if the patient felt well he/she would not bother the physician. It was interesting that financial problems were not mentioned as barriers for the follow-up visit: the awareness and education of the patients were considered decisive factors. It could be concluded that according to the physicians patient was responsible for the follow-up of the disease after the treatment with education and awareness being decisive factors. The explanation for the dispensary supervision done by a few physicians could be the policy in that particular hospital.

The findings for the possible barriers to getting proper treatment revealed that the main potential barrier for the first visits depended on the financial resources of the patients. Ambiguity was observed if comparing with the follow-up section, where the financial factor was not mentioned. It could be explained that the financial problem was a definite potential barrier for the first time visit. If the patient had already visited a doctor, the later follow-up of the disease depended mostly on the education and awareness level of the patient. Lack of information and education reflected in the answers showed that the physicians emphasized the role of the patient, apart from the financial limitations, in the treatment of the allergic rhinitis. Moreover, the recognition of these terms as barriers suggested that good advertising campaigns, including TV, educating the patients about the allergic rhinitis and its prevention could be effective.

CONCLUSION

Based on the qualitative study conducted in the otorhinolaryngological departments of 4 hospitals and 4 district polyclinics of Yerevan, it was found that, in terms of knowledge, there was no difference between the specialists working in the hospitals and those in the district polyclinics. The only difference between the specialists practicing in hospitals and polyclinics was that the latter did not perform surgery; they sent all those patients with allergic rhinitis needing surgery to hospitals. Hence, the findings can be generalized to the otorhinolaryngologists in general practicing in Yerevan.

The main findings of this study were the following: 1) There was a difference between the theoretical and practical aspects of management of allergic rhinitis: most otorhinolaryngologists paid more attention on their practice rather than on their knowledge and scientific advances; 2) Their main concern in the practice was the financial affordability of patient, which might impede them from all the necessary steps for the diagnosis and treatment of allergic rhinitis; 3) Only a few specialists treated the disease based on the type of allergy; 4) Ineffective treatment, along with financial difficulties and patient awareness, was found among

the responses for the potential barriers for the follow-up; 5) There was also lack of any common treatment strategy among the specialists and none mentioned about any existing guideline; 6) Their opinions about the prevalence of allergic rhinitis were based on their limited perspective assumptions and no references were given for their conclusions; 7) Their perspectives toward the seriousness of allergic rhinitis, its impact on quality of life, and the primary prevention were based only on their practice and were underestimated; 8) It was possible to determine the main potential barriers for the first visits and the later follow-up: financial limitations and lack of awareness and education of the patients about the allergic rhinitis. Furthermore, some suggestions were offered by the specialists on how to initiate the prevention and education campaigns; and 9) None of the participants was familiar with the WHO guideline, new classification of allergic rhinitis, thus, none used these recommendations in their practice.

STUDY LIMITATIONS

This study included only Yerevan marz. It excluded the pediatricians, because children are considered vulnerable group and need different treatment. The sample size was small, although it was revealing already the repeated responses. The findings of the impact of allergic rhinitis on the quality of life might not be reliable, because the definition of the term was not provided and the understanding of the term was not clear among the specialists. Moreover, the analysis was done by the student-investigator; in qualitative studies the analysis should be done by three independent researchers.

RECOMMENDATIONS

The study recommends first of all conducting a similar study in other marzes of Armenia, to know what the otorhinolaryngologists working in other marzes think, feel, and do for allergic rhinitis. It is also recommended to conduct a quantitative study exploring the knowledge regarding the allergic rhinitis and appropriate skills of physicians in the otorhinolaryngological departments of hospitals and in district polyclinics in Armenia. A quantitative study is suggested

to verify the findings of the current qualitative study. As the pediatricians were excluded, it is suggested to start a similar qualitative study among them.

It is suggested to provide adapted guideline for the low income countries to the otorhinolaryngologists working in hospitals and district polyclinics in Armenia. The guidelines also detail how to minimize the contact with the allergen: staying inside, isolation of pets. For dust mite allergy, allergen-proof encasements of pillows, mattress, and carpet removal are recommended (19). Meanwhile, initiation of education of the patients with allergic rhinitis about the triggers, seriousness of the disease becomes necessary. The patient information leaflets, available in the ARIA guideline, can be provided to them (2). The leaflets advise how to obtain daily pollen counts and how to reduce exposure to house-dust mite and/or animal dander. And finally, raising awareness of general population on the allergic rhinitis as a public health problem is recommended, as some of participants emphasized its importance. TV advertising campaigns can also be involved.

To conclude, financial difficulties of patients limited the otorhinolaryngologists' practical skills and impacted on the quality of treatment. Unavailability of recent literature and internet resources for the majority of specialists resulted in a lack of appropriate knowledge and attitude toward the allergic rhinitis. Nonetheless, adopting the existing WHO guidelines for low income countries could help to improve the quality of care of allergic rhinitis and to encourage continuing education among the specialists.

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TABLES

Table 1

Selection of the participants in four hospitals

Hospitals	A	B	C	D
Number of specialists in the otolaryngological department	16	8	4	6
Number of selected	8	3	2	3
Number of participants	7(one refused)	3	2	3

Table 2

Selection of the participants in four district polyclinics

District Polyclinic	E	F	G	H
Number of otolaryngologists employed	2	2	1	1
Number of selected	2	2	1	1
Number of participants	2	2	1	1

Note: the names of the hospitals and polyclinics are symbolic.

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