

Management of childhood asthma: Physicians' perspective in Turkey

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Many attempts have been made to decrease asthma-related mortality and morbidity, including preparation and distribution of guidelines. However, several studies from different regions of the world have reported low asthma control among children as well as adults. A questionnaire-based study was performed involving a number of Turkish physicians taking care of pediatric asthmatics, and aimed to document asthma-related knowledge. Of 219 physicians, 126 (57%) completed the questionnaire. The majority were pediatricians (92%), with an average of 253 ± 14.1 outpatients per week, and an asthmatic ratio of 15.8%. According to the self-reported knowledge, management of acute asthma received the highest (3.42 ± 0.05) and chronic asthma the lowest scores (3.18 ± 0.06). The study group further credited inhaled and oral steroids similarly for the treatment of exacerbations and reported infrequent usage of spirometry and oxygen saturation than physical finding to estimate attack severity. Although with regard to most subjects, physicians' opinions appeared to be in agreement with the guidelines, there were certain differences implying need for future educational training. Chronic management, reported as the least understood part of the guidelines, suggests requirement of new models for estimating chronic disease severity.

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During the last two decades, many attempts have been made to decrease asthma-related mortality and morbidity, including preparation and distribution of guidelines (1). Neither effectiveness of these activities nor physicians' and patients' perception of the disease has been investigated extensively (2). Recently, we performed a nationwide survey to ascertain perception of the impact of asthma in daily life among children, and found that almost 50% experienced symptoms at least once a week, and a similar percentage became symptomatic with exercise (3). Although many potential reasons can be speculated, identically designed surveys conducted among physicians may illustrate differences between patients' and physicians' perspective and provide baseline information and evidence of the possible reasons for the low asthma control (4, 5). This questionnaire-based study was conducted to document/reflect asthma-related knowledge and attitude

of Turkish physicians treating children with asthma.

Material and methods

The study is based on a physician group who attended a national pediatric asthma meeting in January 2003, which was sponsored and organized by a pharmaceutical company (Merck Sharp & Dohme, Turkey). According to company representatives' information, the participants included physicians who worked with pediatric asthmatics (namely, those who work in a pediatric asthma clinic; those who have asthma drugs constitute a majority of their prescriptions; those who are known as asthma specialists in their region; and those who have asthmatics as 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 prepared by the investigators and based on the information available in guidelines. The questionnaire elicited data on the physicians' demographics, self-perception of asthma knowledge, parameters used for asthma diagnosis and estimation of acute attack severity, usefulness of medications for acute and chronic asthma, and expectations from long-term treatment. All of the questions, aside from demographics, were prepared as statements and answered on a 5-point scale with minimum and maximum scores of 0 and 4 in order to reflect physicians' agreement.

Group differences were compared using the Friedmann test, and when a significant difference existed, inter-group differences were tested using Wilcoxon test. $p = 0.05$ was considered statistically significant.

Results

Study group

Of the 240 physicians invited, 219 attended the meeting and 126 (57%) responded to the questionnaire. The characteristics of the respondents are summarized in Table 1. A greater proportion of the respondents (66.3%) were male, as with the meeting participants (67%), and majority noted their primary work place as hospital (in Turkey physicians often work in more than one place).

Table 1. Characteristics of the study group

Characteristics	Physicians (n = 126)
Sex (male/female)	85/41
Age (yr)	39.3 $\pm$ 0.6*
Duration of experience (yr)	15.2 $\pm$ 0.6*
Number of patients per week	253.9 $\pm$ 14.1*
Asthma patients per week	40.2 $\pm$ 4.5*
Specialty n (%)	
Pediatrician	105 (83.2)
Pediatrician + allergist	11 (8.8)
General practitioner	5 (4)
Family physician	5 (4)
Primary work place n (%)	
Hospital	84 (66.7)
Training hospital	11 (8.7)
University	14 (11.1)
Outpatient clinic	17 (13.5)

*Mean $\pm$ s.e.m.

Self-perception of knowledge

Physicians' asthma knowledge and ability were questioned under four subcategories (overall, diagnose, acute asthma and long-term management) and all received mean scores of above 3 with the highest (3.42 ± 0.05) and lowest (3.18 ± 0.06) scores for acute and chronic management, respectively.

Diagnosis

Physicians recorded that 'recurrent wheezing' and 'favorable response to bronchodilator' are most suggestive symptoms/findings for asthma diagnosis and agreed (3.09 ± 0.09) with 'Asthma diagnosis is challenging during infancy' and disagreed (1.91 ± 0.11) with 'Asthma diagnosis requires pulmonary function tests'.

Acute attack

Dyspnea, retraction, and wheezing were the three with the highest credits to assess attack severity and interestingly pulmonary functions, oxygen saturation and blood gases, received lower scores than chest auscultation and wheezing ($p < 0.001$, for each) (Fig. 1). As expected, physicians evaluated short-acting β_2 agonists (3.77 ± 0.06) as the most useful drug in acute asthma whereas inhaled (ICS) and systemic (OCS) corticosteroids received comparable scores (2.88 ± 0.11 and 2.94 ± 0.09 , respectively). Scores of theophylline, ipratropium bromide and adrenalin were close to 2, indicating their infrequent use.

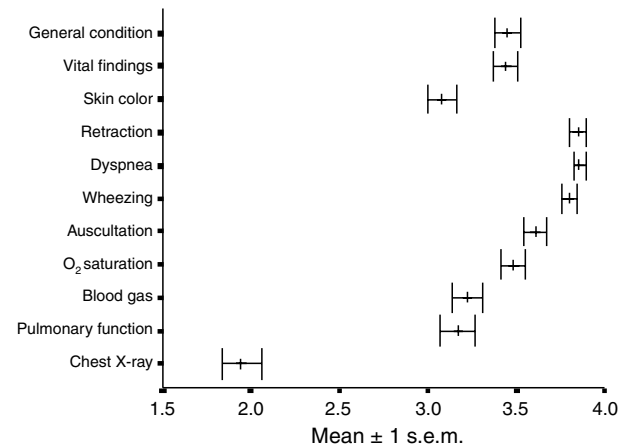


Fig. 1. Physicians' opinions regarding the importance of various parameters used to assess the severity of acute attack (mean $\pm$ s.e.m.) (4, very important; 3, important; 2, fairly important; 1, less important; 0, not important).

Chronic asthma

Inhaled corticosteroids are evaluated (3.60 ± 0.07) as the most useful drug, followed by leukotriene receptor antagonists (LTRA) (3.13 ± 0.08) and long-acting β_2 agonist (2.55 ± 0.11). Ketotifen, nedocromil and sodium cromoglycate received lower scores around 1 indicating their infrequent usage. Physicians' attitudes toward treatment goals demonstrated that 'control of symptoms' appeared as the leading goal (3.77 ± 0.04) followed by 'my treatment aims to get best lung function' (3.31 ± 0.06). The statement, 'I generally aim for optimum control with minimum drugs' was preferred to the statement, 'I generally use intensive treatment to achieve best control' (2.59 ± 0.12 and 1.66 ± 0.11 , respectively).

Discussion

This questionnaire-based survey – unique of its kind in the country – provides an updated description of knowledge and perception of asthma by this country's physicians who treat children with asthma. Although in most subjects, physicians' opinions appeared to be in agreement with the guidelines, there were certain differences in terms of use of inhaled corticosteroids for acute asthma and less use of objective parameters to estimate attack severity.

Physicians often take different decisions in similar clinical circumstances. Although part of this variation may be appropriate, sometimes it may lead to inappropriate variation. To overcome this problem, guidelines are prepared and disseminated. It is obvious that even good guidelines have no impact in clinical practice unless they reach the intended users (6). In this study, we tested the hypothesis that physicians are not aware of guidelines and that some components of the guidelines are not well understood to develop appropriate educational interventions.

The asthma guidelines (1) suggest OCSs as first-line therapeutic agents in acute asthma not controlled with short-acting β_2 agonists. However we found that physicians credited ICS to a degree similar to OCS for the treatment of acute asthma. Studies regarding the use of ICS in acute asthma have given conflicting results and their place in attack management is not established (7). Although we did not investigate whether high scores for ICS reflect its use in very early stages of an attack or its use instead of OCS, we think that our findings reflect in part the

conservative behavior of pediatricians aiming to avoid potential adverse effects of OCS.

The conservative attitude/behavior of pediatricians is also supported by the high credits for the statement 'I generally aim for optimum control with minimum drugs' compared with 'I generally use intensive treatment to achieve best control', and by the high credits for LTRA in chronic management. The study group gave highest scores for ICS in chronic management, indicating appropriate knowledge. Although ICS provide better asthma control, there is not enough evidence for better lung function prognosis (8) and there is a common fear of potential adverse effects among families, limiting its use. We think that both of these factors seem to be potential reasons for high preference of LTRA, which is commonly used on a single agent in mild asthma. Low scores for sodium cromoglycate, reflecting a decreasing trend in its use, may in part be because children might be expected to be more compliant with taking oral medications once daily than with taking sodium cromoglycate three or four times daily (9). With the availability of LTRA, use of ketotifen, a formerly very popular oral drug in the country, also appeared to be on a decreasing trend, indicating that ease of use and compliance are two important determinants of physicians' preferences. Wheezing phenotypes and risk factors for persistent disease recently started to become clear, and the favorable prognosis previously attributed to all asthmatics appeared not to be the case. In many countries like ours, undertreatment and overtreatment of disease exist simultaneously (5). Although the former predominates in our country, further training on the importance of the risk factors for persistent disease and requirement of close follow-up with objective measures such as lung functions should be the focus.

Another interesting finding was the low usage of objective markers for estimating attack severity, such as pulmonary function tests and oxygen saturation. In most hospitals of Turkey, even in most pediatric asthma centers, spirometers (and to a lesser degree pulse oxymeters) are not available. Compared with many expensive devices used in health service, these two are relatively inexpensive, making lack of financial resources less likely. In our opinion, the major reason is lack of perception of the impact of asthma by the health service provider, leading to inappropriate distribution of health resources.

In spite of high credits for ICS use and low credits for objective marker use in acute asthma,

physicians were most confident with their attack management. This point is interesting and suggests a potential resistance to training activities targeting a behavioral change in this field.

Physicians evaluated their chronic management ability with the lowest scores compared with other components of asthma management. Our previous study has demonstrated that although most of our asthmatics are under regular follow-up, they were still symptomatic, indicating inappropriate/undertreatment (6). In a recent research conducted in the USA to investigate compliance with asthma guidelines, assessment of asthma severity was the most problematic part of the guidelines, indicating at least in part the impracticality of the asthma-grading system of the guidelines (10). Assessment of disease severity is essential to make an appropriate treatment plan. Hence failure of treatment not only causes inadequate control of the disease, but may also lead to decreasing compliance/trust in treatment. In order to assess the asthma severity appropriately, at each visit, the frequency of symptoms should be investigated carefully with direct and indirect questions, and airflow should be monitored (1). An adequate communication requires a comfortable atmosphere for the patients and parents and of course for the physicians. The mean number of outpatients per week seen by our physicians was quite high, making this less likely.

In conclusion, we investigated physicians' perspective regarding asthma management along with the guidelines and showed that although there were some differences implying need for future educational training, most practices were in accordance. As guidelines are based on the results of controlled clinical trials where more compliant subjects are used compared with clinical practice, aims of clinical trials are not always achievable. Further studies on real-life experience to document expectations, compli-

ance, perception and other issues of patients, parents and physicians are required to better delineate and understand the complex nature of the disease control process.

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