



Physicians' preference for controller medication in mild persistent asthma



Arzu Bakirtas^{a,*}, Ali Kutlu^b, Ayse Bacciglu^c, Ferda Oner Erkekol^d, Sevim Bavbek^e, Omer Kalayci^f, Asthma Section Board Members of Turkish National Society of Allergy and Clinical Immunology^g

^a Department of Pediatric Allergy and Asthma, Gazi University School of Medicine, Ankara, Turkey

^b Department of Emergency Medicine, Uskudar University, Istanbul, Turkey

^c Department of Clinical Immunology and Allergic Diseases, Kirikkale University School of Medicine, Ankara, Turkey

^d Department of Clinical Immunology and Allergic Diseases, Atatürk Training and Research Hospital, Ankara, Turkey

^e Department of Clinical Immunology and Allergic Diseases, Ankara University Faculty of Medicine, Ankara, Turkey

^f Department of Pediatric Allergy and Asthma, Hacettepe University School of Medicine, Ankara, Turkey

^g Turkish National Society of Allergy and Clinical Immunology, Turkey

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ABSTRACT

Background: Although the asthma guidelines recommend inhaled corticosteroids (ICS) or leukotriene receptor antagonists (LTRAs) for the treatment of mild persistent asthma, factors governing the physicians' preference are unknown. We aimed to investigate the preference of physicians for the controller medication and the factors governing their choice.

Methods: A self-administered questionnaire composed of 16 questions that aimed to determine the preference of the physicians for the first choice controller medication in mild persistent asthma and physician and patient related factors that may be associated with this selection was e-mailed to the members of the Turkish National Society of Allergy and Clinical Immunology and distributed to participants in the 21st congress.

Results: Of the 670 questionnaires, there were 51% participants and 336 of them were complete enough to be included in the analysis. Low dose ICS was preferred as the first choice controller medication for mild persistent asthma by 84.5% of the physicians. The reasons for physicians' preference were different for ICS and LTRA. In the logistic regression analysis, use of asthma guidelines (OR:3.5, 95%CI:1.3–9.3, $p = 0.01$), alignment in guidelines (OR:2.9, 95%CI:1.4–5.8, $p = 0.002$) and the opinion that it is a more effective (OR:2.3, 95%CI:1.1–4.8, $p = 0.02$) were independently associated with ICS preference. Being a pediatrician (OR:5.4, 95%CI: 2.7–10.5, $p < 0.001$) and the opinion that it has better patient compliance (OR:4.4, 95%CI: 1.6–12.0, $p = 0.004$) were independently associated with LTRA preference.

Conclusion: Surveyed Turkish physicians, the majority of whom were specialists, preferred ICS over LTRA as controller medication in mild persistent asthma. Asthma guidelines, training background (pediatrician versus not) and perceived efficacy and patient compliance appeared to influence their preferences.

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1. Introduction

Asthma is a chronic respiratory disease and almost half to three quarters of the patients have persistent symptoms [1]. According to Asthma Insights and Reality in Turkey (AIRET) Study, 72.7% of

children and 88.1% of adults with asthma were classified as having persistent disease in Turkey [2]. All asthma guidelines recommend a daily controller medication in persistent asthma in addition to a short acting inhaled bronchodilator as reliever [3–6]. Turkish physicians were guided by the most popular asthma guidelines as Global Initiative (GINA) and Turkish national ones [4,5].

National and global guidelines recommended either low dose inhaled corticosteroid (ICS) or leukotriene receptor antagonist (LTRA) as the initial treatment for mild persistent asthma [4,5].

* Corresponding author. Gazi University School of Medicine, Department of Pediatric Allergy and Asthma, 06500 Besevler, Ankara, Turkey.

E-mail address: arzubakirtas@gmail.com (A. Bakirtas).

However, in the latest updates of these guidelines low dose ICS is the preferred one referring LTRA as less effective option which may lead to loss of asthma control [3–7]. Recommendations of regular controller medication in children ≤ 5 years are also not different as long as the symptoms are highly suggestive of asthma and preferred initial option is stated as regular daily low dose ICS plus as-needed reliever in the guidelines [4–6]. Regular LTRA had a modest effect on reducing asthma symptoms and need for oral corticosteroid course and Cochrane review concluded that LTRA had no superiority than placebo in young children with recurrent viral wheezing [4,7].

Even though these medications have been in the asthma armamentarium for many years, the search for the factors that predict a favorable response to either medication is largely unknown and it seems that a treatment trial is the most sensitive way to determine the response to each medication [9–11]. There are some clues associated with a favorable response to ICS (high levels of exhaled nitric oxide, total eosinophil counts, levels of serum IgE, and levels of serum eosinophil cationic protein and lower levels of methacholine PC(20) and pulmonary function, parental history of asthma and previous history of ICS use) [8–14] and to LTRA (younger age and shorter disease duration) [9,11] that may aid the physicians in determining their first choice medications in the treatment of mild persistent asthma. The use of LTRA may have also a more specific target population with concomitant allergic rhinitis, exercised induced or aspirin exacerbated asthma [15–18].

There are also patient related factors in the choice of controller medications such as lower velocity growth under ICS, poor inhaler technique, unwilling to use ICS, and experienced intolerable side effects of ICS that might also be considered by the specialized physicians' practise [4–6].

Some non-evidence based factors which are not mentioned in the guidelines might also influence highly specialized physician in their decision on starting controller medicine such as obesity, diabetes or hypertension as being a contraindication to ICS treatment, or avoiding LTRA in patients with psychological problems.

We hypothesized that physicians prefer inhaled corticosteroid as first line treatment since current guidelines indicate it as the most appropriate regimen for patients with mild persistent asthma. We also wanted to investigate whether there are some other physicians and patient related factors that are not written in the guidelines which may influence physicians' first choice of controller medications as a secondary aim.

2. Methods

An 18 question questionnaire was designed by the authors to investigate physician's preference in asthma prescribing (Appendix). The questionnaire was not validated and pre-testing was not done. The core question was about the preference of the physicians for the first choice controller in mild persistent asthma. Physicians could choose only one controller medication: ICS or LTRA. Thirteen questions were about the possible physician related factors that could be related with this choice. We also included questions on the physicians' opinion regarding predictors of good response, patient related factors for preference of physicians and the choice of add-on treatment for asthmatic patients ≤ 5 years and > 5 years old in the step up approach.

The study's target population was the physicians dealing with asthma patients. In Turkey, family physicians, pediatricians, internal medicine physicians, pulmonologists and allergists can see, diagnose and manage asthma patients. They all can prescribe ICS, LTRA but only allergists and pulmonologists can prescribe combination (ICS plus LABA), LABA and anti-IgE. It is also recommended that patients who need step 3 of national or GINA asthma guideline

be referred to either an allergist or pulmonologist. Allergy congress is a good sample of the above profile. Therefore, we delivered the questionnaires to physicians when they apply for registration at the congress registration desk throughout the congress 21st National Allergy and Clinical Immunology Congress held in November 2014. The questionnaire was also e-mailed to the members of the Turkish National Society of Allergy and Clinical Immunology. The participation was purely on a voluntary basis and by completing the survey it was implied that consent was given to participate in the study. The study population was composed of physicians who returned the completed forms. The study was approved by the Ethics Committee of Gazi University School of Medicine (Protocol 13 Oct 2014/#459).

3. Data analysis

Data from completed questionnaires were analyzed with SPSS (IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp USA). Chi-square test was used to test for significant differences between the categorical variables. Continuous variables were compared using Student's *t*-test or Mann-Whitney *U* test depending on the normality of distribution. Multivariate logistic regression analysis was used to determine the factors associated with preference of physicians for the first controller medication. A *p* value of less than 0.05 was considered to be significant.

4. Results

There were 342 physicians who responded among 670 questionnaires that were delivered (51.0%). Six questionnaires were not included in the analysis because the question regarding the choice of controller medication was not answered (Table 1). Ninety four percent of physicians were specialists and 47.9% of the physicians were adult pulmonologists. Forty eight percent of the physicians were employed at a university hospital and 69.3% of physicians were following only adult asthma patients. Median number of asthma patients seen by the physicians was 40 per month (Table 1).

Table 1
Demographic characteristics of participants (Questionnaire part-I).

	n:336
Q1. Age, yr (25p–75p)	38.5 (32.7–42.2)
Q2. Male, n (%)	181 (53.9)
Q3. Specialist, n (%)	319 (94.9)
Q4. Spectrum of physicians, n (%)	
Adult pulmonologist	161 (47.9)
Pediatrician	67 (19.9)
(non-allergist/ non-pulmonologist)	
Internal medicine	35 (10.4)
(non-allergist/non- pulmonologist)	
Pediatric allergist	29 (8.6)
Adult allergist	20 (6.0)
Family physician	15 (4.5)
Pediatric pulmonologist	6 (1.8)
Chest surgery	1 (0.3)
Missing	2 (0.6)
Q5. Affiliation, n (%)	
University hospital	165 (48.2)
State training and research hospital	96 (28.1)
State hospital	47 (13.7)
Private hospital	29 (8.5)
Private office	5 (1.5)
Q6. Graduation year, yr (25p–75p)	1999 (1992–2006)
Q7. Asthma outpatient visit/month, n (25p–75p)	40 (10–150)
Q8. Age spectrum of patients followed by the physicians', n (%)	
Adult	233 (69.3)
Children	99 (29.5)

Continuous parameters were shown as median (25p–75p).

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