



# The Approaches of Family Physicians to the Diagnosis and Treatment of Asthma

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## ABSTRACT

**Objective:** Asthma is a chronic inflammatory disease. Clinical findings in repeated attacks are cough, wheezing, respiratory difficulty, and airway obstruction. The first and most important stage in the control of asthma is the family physician. The aim of this study was to determine the level of knowledge of family physicians on asthma and to raise awareness on the subjects of diagnosis and treatment of asthma.

**Materials and Methods:** The study was implemented with the voluntary participation of 210 family physicians. A pre-prepared questionnaire was completed in face-to-face interviews. The questionnaire had been prepared with the aim of measuring the skills of family physicians in diagnosing and treating asthma patients. With the correct answers provided, it was examined whether or not there was a relationship with the duration of professional experience of the family physicians. The participants were evaluated in two groups, those with 1-10 years of professional experience and the ones with 11-30 years of experience.

**Results:** A total of 210 family physicians were evaluated in the study, comprising 124 (59%) males and 86 (41%) females, with a mean age of  $38.28 \pm 7.76$  years. The group with 1-10 years of professional experience comprised 45 (52.3%) males and 41 (47.7%) females, with a mean age of  $30.84 \pm 3.03$  years. Those with 11-30 years of experience comprised 79 (63.7%) males and 45 (36.3%) females, with a mean age of  $43.44 \pm 5.51$  years. A statistically significant difference was determined between the groups of less and more experience in only three items: "asthma symptoms recover with bronchodilator drugs" ( $p=0.011$ ), "I treat children with an acute attack of asthma with nebulizer bronchodilator treatment" ( $p=0.040$ ), and "I do not feel confident to start treatment for any patient that I think has asthma" ( $p=0.019$ ).

**Conclusion:** Increasing the confidence of family physicians and encouraging them to increase their levels of knowledge on the subjects of diagnosis of asthma and especially acute and preventative treatment could contribute to better control of this disease, which causes high morbidity and mortality.

**Keywords:** Asthma, family physician, preventative treatment, attack treatment

## INTRODUCTION

Asthma is a chronic inflammatory disease that affects approximately 300 million people worldwide, and approximately 250,000 deaths per year are due to asthma-related diseases (1). Clinically, asthma is not a single disease, it has different endo- and phenotypes. Asthma can be triggered by infections, allergens, or exercise (2). Whatever the reason that triggers the attacks, typical clinical findings are cough, wheezing, respiratory difficulty, and airway obstruction (3). When asthma diagnosis and treatment are delayed, an increase is expected in morbidity and mortality (4).

Therefore, all physicians in contact with patients, but primarily family physicians, must be equipped with sufficient knowledge on asthma diagnosis and treatment. In Turkey, a three-step healthcare system to refer is used, in which family physicians are the first step and the first contact with patients is made by them. The aim of this study was to call attention to asthma knowledge level and raise awareness of family physicians about diagnosis and treatment of this disease. In addition, the determination of the existing levels of knowledge of family physicians could form the basis for the planning of the necessary training programs.

**MATERIALS and METHODS**

The study included a total of 210 family physicians who participated voluntarily. Approval for the study was granted by the Local Ethics Committee. During routine monthly meetings of the local health authority, face-to-face interviews were conducted with the family physicians and a pre-prepared questionnaire was completed. In the preparation of the questions on the form, the study by Yilmaz et al. (5) was used as a reference. The questionnaire used was designed to collect the demographic data of the family physicians and to measure their capability in diagnosing and treating asthma patients. The answers given by the family physicians to the questions on the forms were evaluated as correct or incorrect according to GINA (2018 GINA Report, Global Strategy for Asthma Management and Prevention).

Analysis was made of correlations between the correct answers and the duration of professional experience. The physicians were separated into two groups, those with 1-10 years of professional experience and those with 11-30 years of experience.

**Statistical Analysis**

Statistical evaluation of the data was done using SPSS 18 software. Measurable variables are stated as mean ± standard deviation (SD), and categorical variables as number (n) and percentage (%). The relationships between variables were evaluated with the Chi-square test. A value of p<0.05 was accepted as statistically significant.

**RESULTS**

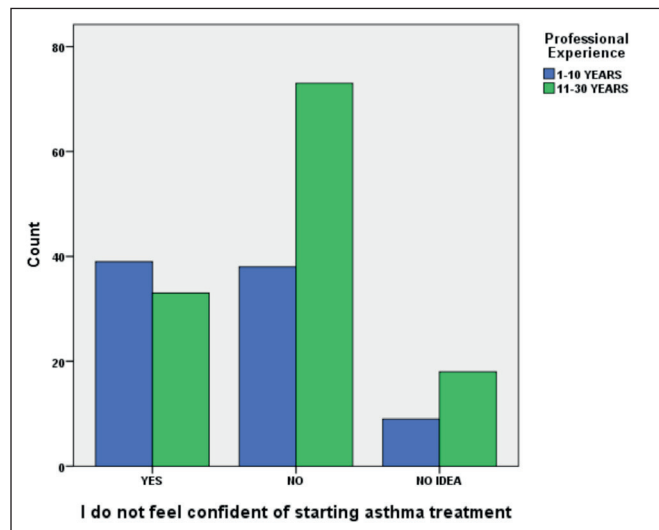
A total of 210 family physicians were evaluated in the study, comprising 124 (59%) males and 86 (41%) females, with a mean age of 38.28±7.76 years. The group with 1-10 years of professional experience comprised 45 (52.3%) males and 41 (47.7%) females, with a mean age of 30.84±3.03 years. Those with 11-30 years of experience comprised 79 (63.7%) males and 45 (36.3%) females, with a mean age of 43.44±5.51 years. The responses to the questionnaire statements are shown in Tables I and II.

The physicians were separated into two groups according to their professional experience and evaluation was made of differences between the groups. A statistically significant difference was determined in only three items (Table III).

The group with less experience replied at a statistically significantly higher rate that they did not feel confident about starting asthma treatment for a patient (Figure 1).

**DISCUSSION**

Asthma is a chronic disease that is seen frequently, but there are still problems about diagnosing it. Asthma patients who have not been diagnosed continue to keep Emergency Departments busy because of acute attacks. As family physicians are closest to patients, if healthcare policies were able to increase their knowledge and capability levels on asthma diagnosis and treatment, the problem of patients presenting at the Emergency Department with acute asthma attack could be overcome. Previous studies have emphasized deficiencies in the knowledge and capabilities of family physicians, and the importance of training has been reported (6-8). The results of the current study demonstrated that the knowledge of family physicians on asthma diagnosis was generally at a good level. Correct responses to the questions related to asthma diagnosis were given by 60% or more of the family physicians. There were some deficiencies on treatment. In the treatment of asthma, 65% of the family physicians stated that antihistamines should be given. In a study by Yilmaz et al. (5), it was reported that approximately 2%



**Figure 1.** A comparison of the answers given to the question “Do you feel confident of starting asthma therapy” is shown. Physicians with less experience expressed that they felt themselves inadequate at a higher rate. The vast majority of experienced physicians said “I feel confident about starting asthma therapy.”

**Table I. Responses to statements about the diagnosis of asthma and the treatment of acute attacks.**

	Correct n (%)	Incorrect n (%)	I have no idea n (%)
A family history of asthma or allergic rhinitis increases the risk of asthma	204(97.1)	5(2.4)	1(0.5)
Inhaled bronchodilators are used in the treatment of acute asthma attacks	201(95.7)	5(2.4)	4(1.9)
Children's asthma is usually allergic	194 (92.4)	10 (4.8)	6 (2,9)
Asthma has a course of recurrences and recoveries	194(92.4)	11(5.2)	5(2.4)
When administering drugs with AeroChamber/nebulizer, it is very important that the completely seated on the face	190(90.5)	10(4.8)	10(4.8)
Asthma symptoms recover with bronchodilator drugs	184(87.6)	19(9)	7(3.3)
Inhaled steroids are used in the treatment of acute asthma attacks	181(86.2)	25(11.9)	4(1.9)
The presence of animals at home increases the risk of asthma	176(83.8)	26(12.4)	8(3.8)
After the administration of drugs with AeroChamber/nebulizer, the face of the child must be cleaned	164(78.1)	14(6.7)	32(15.2)
Recurrent wheezing and cough are symptoms of asthma	160(76.2)	41(19.5)	9(4.3)
Food allergies can lead to asthma	138(65.7)	50(23.8)	22(10.5)
Antihistamines are necessary in asthma treatment	138(65.7)	64(30.3)	8(3.8)
Systemic steroids are used in the treatment of acute asthma attacks	138(65.7)	53(25.2)	19(9)
Inhaled ipratropium is used in the treatment of acute asthma attacks	131(62.4)	48(22.9)	31(14.8)
Recurrent upper respiratory tract infections increase the risk of asthma	124(59)	72(34.3)	14(6.7)
Inhaled steroids are necessary in asthma preventative treatment	115(54.8)	79(37.6)	16(7.6)
When administering drugs with AeroChamber/nebulizer, the child must be awake	113(53.8)	56(26.7)	41(19.5)
Oral bronchodilators are used in the treatment of acute asthma attacks	111(52.9)	84(40)	15(7.1)
Mucolytics are necessary in asthma treatment	65(31)	128(61)	17(8.1)
When administering drugs with AeroChamber/nebulizer, the child must be in sitting position	27(12.9)	153(72.9)	30(14.3)
Antibiotics are necessary in asthma treatment	14(6.7)	189(90)	7(3.3)

of pediatric specialists used antihistamines in treatment. The rate of family physicians in the current study using antihistamines was noticeably very high. In contrast, 90% stated that it was not necessary to use antibiotics in asthma treatment. It was notable that in the Yilmaz et al. study (5), one in four of the pediatric specialists used antibiotics in asthma treatment. The vast majority of the family physicians in the current study did not use antibiotics. Of the total participants, 61% stated that mucolytics had no place in asthma treatment. This was a better rate than the 50% of pediatric specialists reported by Yilmaz et al. (5). Another problem attracting attention related to treatment was that approximately half of the family physicians used oral bronchodilators. While only 65% of the family physicians used systemic steroids, 86% preferred the use of inhaled steroids in asthma attacks. Yilmaz et al. (5) reported that less than half of the pediatric specialists used systemic steroids in an asthma attack.

A significantly high rate—two-thirds—of the family physicians stated that they had referred a patient who presented with an asthma attack. The rate of those who referred a patient after an attack was 78%. This demonstrates that approximately only one in five family physicians treat patients with asthma attacks, and they stated that they did not feel confident with starting preventative treatment. In the study of pediatric specialists by Yilmaz et al. (5), 96% stated that they felt confident about starting preventative treatment for asthma. At this point, it can be said that rather than a lack of knowledge of the family physicians, there seems to be a lack of confidence.

In a study in Saudi Arabia, the lack of knowledge of family physicians was reported to be a priority (9). Lack of knowledge was also seen to be a priority in another study in Vietnam (10). In the current study, there was no significant difference between the groups of different duration of professional experience about asthma diagnosis and treatment in general. Although the family physicians with

11-30 years of professional experience felt more confident about starting preventative treatment for asthma patients, the rate was approximately 60%. Every study conducted on this subject demands importance. The confidence rate of pediatricians to start asthma therapy in the study by Yilmaz et al. (5), was similar to the current study. It is clear that with improvements in the knowledge of family physicians, success can be achieved in the diagnosis and treatment of asthma.

**CONCLUSION**

In conclusion, increasing the confidence of family physicians and encouraging them to increase their levels of knowledge on diagnosis of asthma, and treatment, could contribute to better control of this disease, thereby reducing its high rates of morbidity and mortality.

**Table II. Responses to statements about asthma prevention.**

	Correct n (%)	Incorrect n (%)	I have no idea n (%)
When applying asthma treatment, I take the education level of the mother into consideration	201 (95.7)	6 (2.9)	3 (1.4)
When applying asthma treatment, I take the place of residence of the child into consideration	197 (93.8)	3 (1.4)	10 (4.8)
When applying asthma treatment, I take the age of the child into consideration	194 (92.4)	8 (3.8)	8 (3.8)
When applying asthma treatment, I take the school attendance of the child into consideration	170 (81)	27 (12.9)	13 (6.2)
I treat children with an acute asthma attack with nebulizer bronchodilators	168 (80)	31 (14.8)	11 (5.2)
I refer children with an acute asthma attack after the attack	165 (78.6)	25 (11.9)	20 (9.5)
I treat children with an acute asthma attack after the attack with preventative treatment	129 (61.4)	48 (22.9)	33 (15.7)
I do not feel confident about starting treatment for patients I consider to have mild asthma	116 (55.2)	57 (27.1)	37 (17.6)
I treat children with an acute asthma attack after the attack with AeroChamber or nebulizer preventative treatment	110 (52.4)	62 (29.5)	38 (18.1)
I treat children with an acute asthma attack with AeroChamber	97 (46.2)	73 (34.8)	40 (19)
I treat children with an acute asthma attack with systemic steroids	86 (41)	94 (44.8)	30 (14.3)
I do not feel confident about starting treatment for any patient I consider to have asthma	72 (34.3)	111 (52.9)	27 (12.9)
I treat children with an acute asthma attack after the attack with dry powder inhaler preventative treatment	60 (28.6)	102 (48.6)	48 (22.9)
I treat children with an acute asthma attack after the attack with preventative treatment with oral drugs only	49 (23.3)	125 (59.5)	36 (17.1)
When applying asthma treatment, I take the gender of the child into consideration	46 (21.9)	142 (67.6)	22 (10.5)
I feel confident about starting treatment for all patients I consider to have asthma	42 (20)	128 (61)	40 (19)
I treat children with an acute asthma attack with antibiotics and oral bronchodilators	27 (12.9)	163 (77.6)	20 (9.5)

**Table III. Responses obtained which showed a statistically significant difference between the group with 1-10 years of experience and the group with 11-30 years of experience.**

	1-10 years of experience (n=86)			11-30 years of experience (n=124)			P*
	Correct n (%)	Incorrect n (%)	I have no idea n (%)	Correct n (%)	Incorrect n (%)	I have no idea n (%)	
Asthma symptoms recover with bronchodilator drugs	82 (95.3)	4 (4.7)	0	102 (82.3)	15 (12.1)	7 (5.6)	0.011
I treat children with an acute asthma attack with nebulizer bronchodilators	76 (88.4)	7 (8.1)	3 (3.5)	92 (74.2)	24 (19.4)	8 (6.5)	0.040
I do not feel confident about starting treatment for any patient I consider to have asthma	39 (45.3)	38 (44.2)	9 (10.5)	33 (26.6)	73 (58.9)	18 (14.5)	0.019

\* Chi Square.

### Conflict of Interests

The author have no conflict of interests to declare regarding the content of this article.

### Ethical Statements

Ethical approval was obtained from the University of Kahramanmaras.

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None.

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