

Physician/Patient Differences in the Perception of Asthma: Impact on Everyday Life and Level of the Asthma Control in Croatia

N. Rakušić¹, D. Krmpotić¹, M. Samaržija¹, D. Richter² and P. Krmpotić³

¹ Department of Pulmonary Medicine, University Hospital for Lung Diseases »Jordanovac«, Zagreb, Croatia

² Department of Pediatrics, University Hospital Center »Zagreb«, Zagreb, Croatia

³ Department of Clinical Psychophysiology, Psychiatric Hospital »Vrapče«, Zagreb, Croatia

ABSTRACT

The aim of the study was to compare physician/patient differences in the perception of asthma. The data were obtained by questionnaires from 156 physicians and 148 asthmatics in four urban regions in Croatia. On a »bad day«, 62% of physicians and 16% of patients perceived respiratory symptoms with statistically significant difference. The patients described asthma impact in terms of reduced daily activities and experienced emotional problems. Asthma was estimated as controlled in 28% of adults and 49% of children, nevertheless, 45% of adults and 22% of children reported respiratory symptoms. The patients seem to be satisfied with asthma control that does not correspond to suppression of symptoms, whereas physicians neglect patients' emotional problems and asthma impact on everyday life. The differences in the perception of asthma may reflect differences in beliefs about health. Physicians see health as an absence of symptoms, whereas patients regard being healthy as »being able«.

Introduction

Asthma is one of the most common chronic disease around the world with an average prevalence of 10–15% in children and 5–10% in adults in the western world¹. On average, 3–5% of patients suffer from asthma in Croatia². Despite ad-

vances in the understanding of pathophysiology and availability of efficient therapy, asthma frequency seems to be increasing both in children and adults^{3,4}. It is known that optimal asthma management requires successful patient/physician partnership with the patient assuming an active role. Relationship between

patients and physicians and consequently the patient outcomes may be compromised if the perceptions of health and disease are not consistent. In a number of recent studies differences were observed between patients and physicians in the perception of asthma impact on everyday life and the level of asthma control⁵⁻⁷. The proposed goals for successful asthma management are mortality prevention, morbidity reduction and improvement in patient well-being^{8,9}. The conventional clinical measures of the severity of asthma assess the respiratory status aiming at the first two objectives. There is a growing body of evidence that correlations are only weak to moderate between clinical measures and patient's feeling or function in daily activities¹⁰⁻¹².

Asthma control has been defined by GINA (Global Initiative for Asthma) in terms of a number of criteria including absence of symptoms, minimal reliever use, no emergency visits and normal or near normal lung function^{13,14}. However, asthma control is frequently confused with asthma severity¹⁵. Physicians often underestimate level of asthma control as they focus on improvements in objective parameters produced by efficient anti-asthmatic drugs, whereas patients commonly focus on their inability to take part in daily activities and the emotional burden of their disease. These patient/physician differences in the perception of asthma impact on the quality of life suggest that there is no validated integral measure of asthma control.

Prospective studies performed in asthmatics with global questions and detailed health status or quality of life questionnaires have contributed to the assessment of asthma impact on everyday life and the achieved level of asthma control^{16,17}. Quality of life questionnaires contain the questions that physicians have been asking for many generations: How are you feeling? Are you limited in

your daily activities? Does this bother you? The health status questionnaires may provide a standardized and quantified summary of the problems patients themselves consider important. Each new study in which a health questionnaire is used contributes to improvement of its performance, validity and estimation whether, and to what degree, the goal of quality living with asthma is achievable and realistic.

The aim of this study was to compare physician/patient differences in the perception of asthma impact on everyday life and evaluate the achieved level of asthma control in patients with mild to moderate asthma.

Subjects and Methods

Sample selection

The study was done between June and September 1999 in four main urban regions in Croatia (Zagreb, Rijeka, Split, and Osijek). Data were obtained by questionnaires from 156 physicians and 148 adult and pediatric patients with mild to moderate asthma according to GINA criteria¹⁴.

The inclusion criterion for patients was diagnosis of mild and moderate asthma.

The exclusion criteria for patients were as follows: diagnosis of intermittent and severe asthma or COPD, then, depression or other psychiatric illness, children autism, alcohol or drug abuse, current or recent use of major tranquilizers or sedatives.

In the study were included general practitioners, pulmonologists and pediatricians working in outpatients' clinics in four main urban regions in Croatia, whereas physicians working in hospitals or clinics were excluded.

Patients' data were collected via 18 outpatient departments and 9 pharmacies. Patients at check-ups in outpatient

clinics or in pharmacies presenting with a prescription for asthma medication were asked to complete a questionnaire. The patient sample included 80 adults, 31 children and 37 parents of children younger than ten years. Physicians' data were recruited from the registry in alphabetical order. The physician sample included 80 general practitioners (GPs) (31 from Zagreb, 18 from Split, 16 from Osijek, 15 from Rijeka), 45 pediatricians (19 from Zagreb, 10 from Split, 8 from Osijek, 8 from Rijeka) and 31 pulmonologists (12 from Zagreb, 7 from Split, 7 from Rijeka, 5 from Osijek). Patients and physicians were not selected in any way and provided a random sample of urban population.

Questionnaire

The questionnaires contained the same key questions about asthma symptoms and asthma control and included a free-text section where patients, parents of children younger than ten years and physicians were asked to describe a »bad asthma day«.

The set of questions for estimating the common asthma symptoms and the level of asthma control was as follows: How often have you experienced shortness of breath during the day? How often have you been woken up by an attack of shortness of breath at night? How often have you had dry, irritating cough? How often have you had emergency visits? How often have you had to use a reliever drug? Do you think your asthma is under control?

Statistical analysis

The data are presented in absolute and relative frequencies of various answers, the statistical significance was assessed by the test of the significance of the differences of proportions and the Kruskal-Wallis ANOVA test. Statistical analyses were performed using the SPSS software for Windows, v.8.0 (SPSS Inc., Chicago, Illinois, USA). Results were con-

sidered statistically significant for p values less than 0.01.

Results

We analyzed 304 questionnaires completed by 148 patients and 156 physicians. There were included 80 adults (26%), 31 children 10 to 14 year old (10%), 37 parents of children younger than 10 years (12%), 80 GPs (26%), 45 pediatricians (16%) and 31 pulmonologists (10%). The mean age of adult patients was 40.7 (range 16–73 years), 58% were females and 42% males. The proportion of adult asthmatics according to gender, age and duration of asthma is shown in Table 1.

The mean age of children was 11.6 (range 10–14 years), 71% were boys and 29% girls. The proportion of children with asthma according to gender, age and duration of asthma is shown in Table 2.

As regards gender, age and duration of asthma, we were not able to detect any statistically significant difference in patients' perception of asthma (> 0.01).

TABLE 1
PROPORTION OF ADULT ASTHMATICS
ACCORDING TO GENDER, AGE AND
DURATION OF ASTHMA

	Number of respondents (n=80)	% of respondents
Gender		
Female	46	58
Male	36	42
Age		
15–30 yrs	28	35
31–50 yrs	30	38
51 and more	22	28
Duration of asthma		
Less than 1 yr	9	11
1–5 yrs	13	16
6–10 yrs	18	23
More than 10 yrs	40	50

TABLE 2
 PROPORTION OF CHILDREN WITH ASTHMA
 ACCORDING TO GENDER, AGE AND
 DURATION OF ASTHMA

	Number of respondents (n=68)	% of respondents
Gender		
Girls	19	28
Boys	49	72
Age		
5 yrs and less	17	25
6–9 yrs	20	29
10–14 yrs	31	46
Duration of asthma		
Less than 1 yr	22	32
1–5 yrs	28	41
6–10 yrs	16	24
More than 10 yrs	2	3

The descriptions of a »bad asthma day« in the free-text section of questionnaires discovered that many patients experienced a heavy emotional burden of their disease. The adults described a »bad asthma day« as follows: »I feel difficult to myself and to others.«, »I'm dissatisfied and upset.«, »I'm in a bad mood and I'm thinking only of my illness.«, »I feel edgy, nervous and irritable.«, »I feel being swung from side to side. I'm frazzled.«, »Terrible! Panic and anxiousness since early morning.«, »Horrible day. I'm afraid to get up.«, »I wish I was dead.«... Parents observed their children »changed their normal routine«, »grew slow and clumsy«, »lacked concentration«, »were too quit, sad and frightened«, »everything bothered them«, »felt tired, sleepy and tearful«, »did not feel sociable«, »were embarrassed to use inhalator or spray in presence of other kids«, »were more difficult in coping with therapy«, »asked for greater parental care« etc.

On a »bad asthma day« the patients complained about respiratory symptoms

as well as non-respiratory symptoms. The patients' common respiratory symptoms were shortness of breath, dry cough and chest tightness. The patients' common non-respiratory symptoms were headache, sickness, vomiting and sleeplessness. In addition, both adult and pediatric patients tended to describe the impact of asthma on everyday life in terms of their capacity to take part in activities. However, physicians focused almost exclusively on asthma symptoms and signs such as dyspnea, dry, irritating cough, chest tightness, ability to talk unaffected, nocturnal symptoms, wheezing and asthma attacks (Table 3).

According to own perception of a »bad asthma day«, 62% of physicians and 16% of patients, respectively, made note of respiratory symptoms. Conversely, 24% of patients and 4% of physicians, respectively, reported anxiety. The difference in the perception of a »bad asthma day« between patients and physicians was statistically significant ($p < 0.01$) (Figure 1).

Specifically in the pediatric group, physicians and parents did not differ significantly in the usage of respiratory symptoms, irritability and fatigue in describing a child's »bad day«.

Regardless of the achieved level of asthma control, adult patients frequently reported difficulty in breathing (63%), irritability (54%), dry, irritating cough (49%), sleeplessness (45%) and headache (44%) at least once a week. Namely, 20% of adult asthmatics experienced all of the five frequently reported symptoms at least once a week. According to parents' own observation, regardless of the estimation of the level of asthma control, their children frequently complained of difficulty in breathing (22%), dry cough (19%), irritability (11%), difficulty in complying with therapy (11%), sleeplessness (8%) and headache (8%) at least once a week.

TABLE 3
DESCRIPTIONS OF A »BAD ASTHMA DAY«

Adults	Children	Physicians
»I cannot... go for a walk make the stairs without the break cleaning the house go to a movie because I find stuffy space irritating concentrate on anything.«	»I cannot... jump play football, play basketball, cycle, run go for outings have a dog or a cat sleep on feather pillows stay at my grandmother's in the country because I can't breathe.«	dyspnea dry cough chest tightness ability to talk unaffected nocturnal waking wheezing asthma attacks

Asthma was estimated as *not* completely controlled by 72% of adults, 51% of children, 70% of GPs, 60% of pulmonologists and 60% of pediatricians. Moreover, 70% and 54% of adult patients, who considered their asthma *not* to be under control, experienced difficulty in breathing and dry cough, respectively, at least once a week. As well, 67 % and 56% of

children, who find their asthma was uncontrolled, experienced difficulty in breathing and dry cough, respectively, at least once a month. According to parents' observation, 44% and 33%, of children whose asthma was *not* considered to be under control complained of shortness of breath and dry cough, respectively, at least once a week.

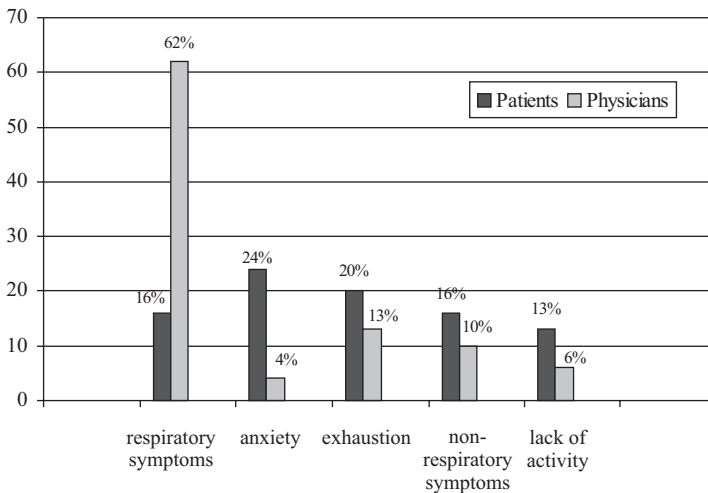


Fig. 1. Physician /patient differences in the perception of a »bad asthma day«.

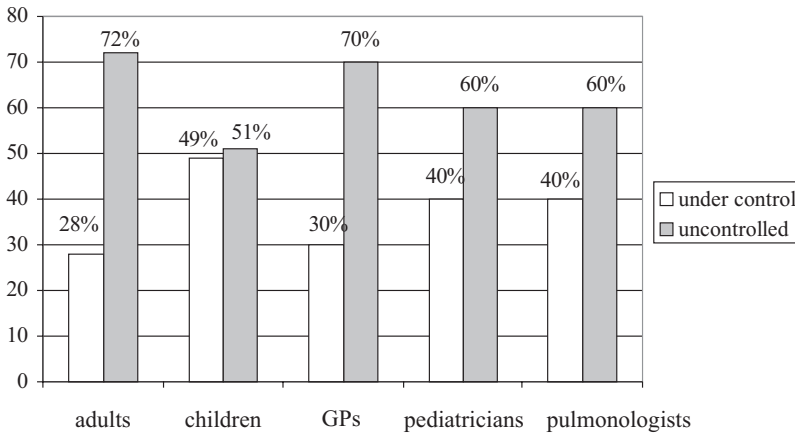


Fig. 2. Physician/patient estimation of asthma control.

Asthma was estimated to be under control by 30% of GPs, 40% of pediatricians and 40% of pulmonologists. In addition, 28% of adults and 49% of children rated their asthma to be well controlled. No statistically significant difference was observed with regard to physician/patient assessment of the achieved level of asthma control (Figure 2).

Nevertheless, 45% and 38% of the adults who believed their asthma was under control, reported to experience shortness of breath and dry cough, respectively, at least once a week. Likewise, 22% and 39% of the children, who rated their asthma control as good, experienced shortness of breath and dry cough, respectively, at least once a month. No statistically significant difference was observed with regard to physician/patient assessment of the achieved level of asthma control.

Discussion

The present study was designed to compare differences in the perception of asthma impact on everyday life and achieved level of asthma control between phy-

sicians and adult and children patients with mild to moderate asthma.

Asthma severity has been classified by GINA features of severity as intermittent, mild persistent, moderate persistent and severe persistent. So, mild asthma is characterized by symptoms once or more times a week but less than once a day, nighttime symptoms more than twice a month, and peak expiratory flow (PEF) of 80% of predicted value and PEF variability of 20–30%. Moderate asthma is characterized by daily symptoms, daily 2-agonist usage, asthma attacks, nighttime symptoms more than once a week, and PEF from > 60% to < 80% of predicted value and PEF variability more than 30%¹⁴.

In December 1997 the Croatian GINA Executive Committee as a part of Croatian Respiratory Society published the 1995 Pocket Guide for Asthma Management and Prevention translated into Croatian¹³. In addition, Croatian national educational program founded on the Global Initiative for Asthma NHLBI/WHO publications was created to help health-care professionals nationwide to take a new look at diagnosing, treating and controlling asthma. The present study was

done between June and September 1999 in four main urban regions in Croatia. Presumably all physicians included in our study have been well educated in asthma severity classifying.

Patients' data were collected via outpatient departments to avoid potential bias towards severe persistent asthma, and via pharmacies to avoid recruitment from the street and possible bias towards intermittent asthma. Physicians' data were collected from the registry in alphabetical order. So, patients and physicians were not selected and provided a random sample of urban population.

Therefore, we have considered that physicians and patients with mild to moderate asthma included in our study may well represent convenient group of participants for studying perception of asthma impact on daily life and achieved level of asthma control. Furthermore, according to our knowledge, this study has provided the first data allowing the interpretation of differences in the perception of asthma and evaluation of asthma control between physicians and patients with asthma in Croatia.

Prospective studies on patient/doctor pairs designed to identify specific relationship between patients and their own doctors concerning the possible influence of their psychological characteristics and existential issues may contribute to further understanding of differences in the health perception between physicians and patients with asthma.

In the present study significant differences in the perception of asthma impact on everyday life were observed between patients and physicians. Patients tend to describe the impact of asthma on daily life in terms of their capacity to take part in activities, whereas physicians rely on respiratory symptoms. The differences in the perception of asthma impact on everyday life may reflect differences in the

beliefs about health. Physicians see health as an absence of symptoms, whereas patients regard being healthy as »being able to...«. In addition, the free-text descriptions of a »bad asthma day« revealed that patients experience a heavy emotional burden of their disease. However, physicians seem to overlook their patients' emotional problems and importance of asthma impact on everyday life.

The results of this study have been reinforced by previous asthma patient surveys. Psychosocial studies during past 20 years have established the relationship between asthma symptoms and psychosocial factors, such as non-compliance, personality type, social status and lifestyle in asthmatics^{18–22}. However, the causality of relationship between emotional status and asthma symptoms remains unclear. Asthmatics who are emotionally distressed report more symptoms than others²³. The authors have also noted that patients with asthma feel ashamed, embarrassed, and angry about their illness²⁴. The personality trait defined as negative affectivity, or the tendency to experience negative emotions such as depression, anxiety, and irritability, is important in understanding the behavior of patients with somatic complaints²⁵. The patient's perception of asthma symptoms determines other aspects of illness behavior. It was found that symptom reports in asthmatics do not necessarily correspond with changes in clinical status, but are related to negative affectivity. Patients who have low optimism attitudes and high panic-fear personality scale scores have been reported to have a high chance of rehospitalization^{26,27}. However, patients who are anxious about asthma attacks are likely to be good compliers, but they may go about their lifestyle and life projects in a restrictive manner leading to overall poor quality of life²⁸. The Asthma in Real Life (AIR) study has revealed an important gap between asthma pa-

tients and health professionals, which seem to derive from the differences between the medical model of asthma (focused on signs and symptoms) and patient's model of asthma (focused on »being able to...«)⁶. The medical model is fundamental to asthma management guidelines. However, patient-defined targets for asthma management could be incorporated into assessment of successful treatment in addition to conventional measures of symptom control, lung function and reliever medication usage.

As expected, the physicians estimate the level of asthma control in terms of GINA guidelines for controlling asthma. According to the GINA revised 1998, asthma control is defined by minimal (ideally no) chronic symptoms including nocturnal symptoms, minimal (infrequent) episodes, no emergency visits, minimal need for short-acting 2-agonist, no limitation on activities including exercise, PEF variability < 20%, normal or near normal PEF¹⁴. However, according to our own observations consistent with the other investigations, it has become clear that the subjective sense of well-being rather than symptoms and lung function measurements plays an important role in patients' evaluation of achieved level of asthma control. Therefore, we preferred asthma control to be defined as a personal and qualitative determinant rather than objective asthma control measurements. So, questionnaires contained a general question about asthma control: »Do you think your asthma is under control?«, and the answer might have been »Yes.« or »No.«.

We would suggest that the subjective evaluation of achieved level of asthma control should be interpreted with caution and considered as an aid to further in-depth communication between physicians and patients.

According to our investigation, asthma was estimated to be completely con-

trolled only in 28% of adults and 49% of children. Nevertheless, 45% of adults and 22% of children, respectively, who believed their asthma was controlled, reported significant respiratory symptoms. Patients seem to be satisfied with the level of asthma control that did not correspond to full suppression of clinical symptoms. Asthmatics considered themselves to have good asthma control, when their reported symptoms and reliever use would suggest less satisfactory scores. In the pediatric group, patients and parents seem to overestimate the quality of asthma control and the physicians seem to be missing the full extent of the burden of asthma in children.

Conversely, the AIR study discovered that most patients (79%) considered their asthma to be well controlled or completely controlled. However, two-thirds of asthmatics who said their asthma was controlled, reported reliever use twice or more a day and around one-third reported asthma symptoms at least once a week⁶. In addition, Nguyen et al. found that 20% of patients with asthma underestimated the disease severity, whereas 27% overestimated the severity of their disease²⁹. The patients' expectations regarding asthma control seem to be rather modest and pessimistic. In addition, patients may not regard symptoms as important criteria by which to assess the achieved level of asthma control.

In conclusion, the descriptions of a »bad asthma day« discovered that patients experience a heavy emotional burden of their disease and tend to describe the asthma impact on everyday life in terms of reduced physical activities, whereas physicians rely on respiratory symptoms. Moreover, physicians neglect their patients' emotional problems and importance of asthma impact on daily life. Patients seem to be satisfied with the level of asthma control that does not correspond to full suppression of clinical symp-

toms. Patients may not regard symptoms as important criteria by which to assess the achieved level of asthma control. Optimal management of asthma requires a patient-focused approach, which suggests that what matters to the patients, is not necessarily what matters to health professionals. Therefore, there is need to find new outcome measures that are sensitive to patients' needs and not solely directed

at measuring objective improvement in asthma symptoms and lung function. For everyday practice it appears that simple quantification of the episodes of shortness of breath or of dry cough might point to a possible discrepancy between the patient's apparent satisfaction with asthma control and the real burden of the disease.

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N. Rakušić

Department of Pulmonary Medicine, University Hospital for Lung Diseases »Jordanovac«, Jordanovac 104, 10000 Zagreb, Croatia

RAZLIKE U PERCEPCIJI ASTME IZMEĐU BOLESNIKA I LIJEČNIKA U HRVATSKOJ: UTJECAJ NA SVAKODNEVNI ŽIVOT I KONTROLA ASTME

S A Ž E T A K

Cilj je istraživanja bio usporediti razlike u percepciji astme između liječnika i bolesnika. Podaci su prikupljeni pomoću upitnika koje je ispunilo 156 liječnika i 148 bolesnika u četiri urbane regije u Hrvatskoj. Utvrđena je statistički značajna razlika u percepciji »lošeg astmatskog dana« između liječnika i bolesnika. Na »loš dan« je 62% liječnika i 16 % bolesnika zabilježilo respiratorne simptome. Bolesnici su opisivali utjecaj astme na svakodnevni život u vidu smanjenih dnevnih aktivnosti i emocionalnih problema. Iako je 28% odraslih i 49% djece procijenilo kontrolu astme zadovoljavajućom, ipak su u 45% odraslih i 22% djece bili prisutni respiratorni simptomi. Izgleda da su bolesnici zadovoljni s nepotpunom kontrolom astme uz prisutne respiratorne simptome, dok liječnici zanemaruju emocionalne probleme bolesnika i utjecaj astme na svakodnevni život. Razlike u percepciji astme mogu odražavati razlike u stavovima o zdravlju. Liječnici shvaćaju zdravlje kao odsutnost simptoma, a bolesnicima je važno »biti sposoban« za svakodnevne aktivnosti.