ATTITUDE TO HEALTH – DIFFERENCES BETWEEN TWO GROUPS OF PATIENTS

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SUMMARY – The aim of the study was to determine whether patients suffering from bronchial asthma constitute a special group of patients regarding their attitude to two groups of etiologic factors and their interaction: 1) ecologic factors and 2) sets of their own habits and behavior. Control group consisted of patients with coronary disease, where the influence of these factors on the disease development is well known. The study did not include objective measurement of ecologic factors but the information on their presence in the patients' environment was obtained through a questionnaire structured especially for this study, based on known scales and verified in our circumstances. The study included 50 patients with bronchial asthma and a control group of 51 patients with coronary disease. χ^2-test was used to define the significance of differences in the analyzed variables, with a risk level up to 5%. Results showed statistically significant differences between asthmatic and coronary patients in their attitude to health. All patients lived in the same city, in a similar ecologic milieu, yet the asthmatic patients perceived ecologic factors in their environment much more often. Coronary patients more frequently blamed life struggle and stresses as well as their own habits and behavior for the occurrence of their disease.

Key words: *Asthma, psychology; Morbidity, trends; Questionnaires; Socioeconomic factors; Attitude to health*

Introduction

Asthma morbidity is increasing worldwide, particularly in highly industrialized countries. Asthma is a chronic, persistent inflammatory disease of the respiratory system characterized by exacerbations of cough, wheezing and spasm in the chest and difficult breathing, which is usually reversible but sometimes very serious and even fatal[1]. The key elements in the definition of asthma are hyperirritability and hyperreactivity of the trachea and bronchi, and reversibility of bronchoobstruction. Hyperreactivity of bronchi may change depending on the exposure to allergens, atmospheric conditions, and existence of respiratory infection. Asthma is a multifactorial disease in which biologic, ecologic, psychologic and social factors play a role[2]. Airway inflammation plays a central role in asthma and its management. Environmental and other factors 'cause' or provoke airway inflammation in people with asthma. There are numerous studies of the impact of stress, social and ecologic factors on the occurrence and development of bronchial asthma[3-6]. The prevalence of stress in modern developed countries is proportional to the increase in the number of asthmatic patients. Ever increasing environmental pollution is also connected with the increased incidence of tension and stress, which all together have negative effects on man's health[7].

Besides indirect harmful health effects of ecologic contamination, direct effects of for example air pollution by formaldehyde and ozone on the development of bronchial asthma have been investigated, showing that these air pollutants act as respiratory sensitizers. They interfere with the functional mucous membrane and contribute to mucociliary secretion and clearance from pulmonary periphery[8,9].

Coronary disease is a clinical syndrome caused by constriction or occlusion of coronary arteries[10]. Many authors

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have studied the behavior, characteristics, and stressors leading to the occurrence of asthma and coronary disease[11-13]. These studies showed the incidence of coronary disease to be significantly greater in persons with type A behavior, this risk factor being as important as other known risk factors (hypertension, hypercholesterolemia, obesity). Although the association of bronchial asthma with some psychologic features of patients has been described[14-16], no specific pattern of behavior and personality characteristics of asthmatic patients have been identified so far.

The aim of the present study was to find out whether the patients suffering from bronchial asthma represent a special group concerning their attitude to two groups of possible etiologic factors and their specific interactions: 1) ecologic factors (exogenous factors) and 2) sets of patients' health habits and behavior in daily life and work as a special group of risk factors known as 'behavioral pathogens'.

Subjects and Methods

Environmental factors (pollution of air, drinking water and food) were not measured directly but information was collected on their possible presence in the patient's environment by interviewing the patients themselves. A structured questionnaire was designed in accordance with the specific needs of the study, based on the known psychometric scales verified in our circumstances[17,18]. The first part of the questionnaire consisted of questions on the patient's attitude to the exposure to and health threat from ecologic factors. The second part consisted of questions asking the patient to assess the role of his/her own behavior and lifestyle in the etiology of his/her illness.

Statistical analysis was performed using the SPSS statistical package. Significance of differences in sequences of qualitative measures (variables) was assessed by χ^2-test with a risk rate of 5%.

Study sample included 50 patients with the diagnosis of bronchial asthma, hospitalized at the Jordanovac Hospital for Pulmonary Diseases. Control group consisted of 51 patients with the diagnosis of coronary disease, at the same time hospitalized at the Rebro Department of Cardiovascular Diseases, Zagreb University Hospital Center, Zagreb.

Results

Out of 101 patients, 50 had the diagnosis of bronchial asthma (group 1) and 51 had the diagnosis of coronary disease (group 2), mean age ± SD 41.7±14.9 and 55.3±10.1 years, respectively ($p<0.05$). Female predominance was recorded in group 1 (n=30) and male predominance in group 2 (n=44). Difference between the two groups was statistically significant ($p<0.05$) (Table 1).

Table 1. Sex and age distribution of study patients

Parameter	Group 1 (n=50)	Group 2 (n=51)	p
Sex			
M	n=20	n=44	0.05
F	n=30	n=7	
Age (yrs)			
Mean ± SD	41.7±14.9	55.3±10.1	0.05

Group 1=patients with bronchial asthma; group 2=patients with coronary disease

The results showed asthmatic patients to perceive air pollution in their environment much more often than coronary patients. So, 16 asthmatic patients reported polluted air (low, moderate or high) as compared with only 5 coronary patients. Difference between the groups was statistically significant (Table 2).

Table 2. Attitude to air pollution in childhood and over the last five years

Patient group	Level of air pollution			
	Very low (n)	Low (n)	Moderate (n)	High (n)
Group 1	34	8	4	4
Group 2	46	3	1	1
Total	80	11	5	5

χ^2=19.810; df=3; p=0.000

Group 1=patients with bronchial asthma; group 2=patients with coronary disease

Table 3. Attitude to damp dwelling as an ecologic risk factor

Patient group	Level of exposure			
	Very low (n)	Low (n)	Moderate (n)	High (n)
Group 1	30	8	7	5
Group 2	41	2	4	4
Total	71	10	11	9

χ^2=11.678; df=3; p=0.01

Group 1=patients with bronchial asthma; group 2=patients with coronary disease

The results revealed asthmatic patients to consider dampness in their homes both at present and in their childhood more important than coronary patients. Between group difference was statistically significant (Table 3).

Asthmatic patients considered the impact of ecologic factors on their health to be very important. So, 22 of them believed that their respiratory system was quite severely damaged by harmful ecologic factors. Only eight coronary patients thought that ecologic pollution had a major effect on their respiratory system. Between group difference was statistically significant (Table 4).

Table 4. Attitude to respiratory system threat from ecologic factors

Patient group	Harmful effect of physical environment		
	No (n)	Moderate (n)	High (n)
Group 1	10	18	22
Group 2	29	14	8
Total	39	32	30

χ^2=31.157; df=2; p=0.000

Group 1=patients with bronchial asthma; group 2=patients with coronary disease

There was great difference between the two patient groups in their attitude to the impact of ecologic factors on the skin and mucous membranes. The study revealed that seven asthmatic patients thought their skin and mucous membranes were at threat from ecologic factors, whereas only one coronary patient shared this opinion. The difference was statistically significant (Table 5).

There were no statistically significant differences between the groups in their attitude to other ecologic factors such as forest death, solid and industrial waste disposal, etc.

The results showed that asthmatic patients considered the effect of stressful and strenuous life on the occurrence of their illness less important. So, 15 of them thought that stress played an important role in the etiology of their disease, whereas 32 coronary patients viewed stress as very important in the development of their illness. The difference was statistically significant (Table 6).

Table 5. Attitude to skin and mucous membrane threat from ecologic factors

Patient group	Harmful effect of physical environment		
	No (n)	Moderate (n)	High (n)
Group 1	34	9	7
Group 2	38	12	1
Total	72	21	8

χ^2=13.816; df=2; p=0.001

Group 1=patients with bronchial asthma; group 2=patients with coronary disease

Table 6. Attitude to strenuous and stressful life

Patient group	Level of impact		
	No (n)	Moderate (n)	High (n)
Group 1	15	20	15
Group 2	5	14	32
Total	20	34	47

χ^2=24.184; df=2; p=0.000

Group 1=patients with bronchial asthma; group 2=patients with coronary disease

The two groups had similar opinion about the impact of unfavorable lifestyle and behavior (cigarette smoking, physical inactivity, inappropriate diet) on the development of their illness. The study showed that only four asthmatic patients and as many as 16 coronary patients considered unfavorable lifestyle and behavior important for the occurrence of their illness. Between group difference was statistically significant (Table 7).

Table 7. Attitude to unfavorable lifestyle and behavior

Patient group	Level of impact		
	No (n)	Moderate (n)	High (n)
Group 1	32	14	4
Group 2	15	20	16
Total	47	34	20
χ^2=24.407;	df=2;		p=0.000

Group 1=patients with bronchial asthma; group 2=patients with coronary disease

Discussion

We tried to carry out this study in accordance with the current understanding of the etiopathogenesis of asthma as an illness resulting from complex interactions of biological factors and predisposing personality traits on the one hand, and factors and stresses in the environment and specific adaptive reactions on the part of the patient on the other hand[19]. Registered cases of bronchial asthma are on a daily increase worldwide, and we are also witnessing ever greater pollution in our environment. There are numerous studies of the possible connection between the increased incidence of bronchial asthma and ever greater ecologic contamination, however, no comprehensive study of psychologic factors in the etiology of bronchial asthma like those performed in coronary patients, which could subsequently be used for preventive and therapeutic purposes, has been conducted to date. Starting from the fact that in many asthmatic patients, unadapted respiratory reactions such as bronchoconstriction represent a specific stress reaction of a psychologic origin[20], we tried to examine the attitude to the ecologic and behavioral factors in the environment of asthmatic and coronary patients, and to see how important they rank the effect of these ecologic factors on their body organs and systems. Results of the study showed that there was no statistically significant difference between the groups of asthmatic and coronary patients according to their living milieu, i.e. they lived in similar ecologic conditions but had different perception of ecologic and behavioral factors in the etiology of their illness. Asthmatic patients ranked the impact of various ecologic factors on their health as much more important and perceived these factors in their environment considerably more often. Unlike them, coronary patients perceived harmful ecologic factors in their environment to a considerably lower degree and believed that their unfavorable lifestyle and habits played a major role in the development of their illness. These results suggest a conclusion that asthmatic patients have some specific personality traits and specific behavioral patterns that might be associated with the development of bronchial asthma, and these factors should be the target of both preventive and therapeutic actions in the future[21]. A recent German study also showed that most patients with symptoms they attributed to environmental pollutans actually had psychologic problems. Other studies in Sweden, USA and UK have reached the same conclusion[22].

On the basis of our results, we conclude that asthmatic patients make a special group of patients concerning the attitude to two groups of etiologic factors and their specific interactions as ecologic factors, and health habits and behavior.

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Sažetak

STAVOVI O ZDRAVLJU – RAZLIKE IZMEĐU DVIJU SKUPINA BOLESNIKA

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Cilj istraživanja bio je ispitati predstavljaju li bolesnici s bronhijalnom astmom posebnu skupinu bolesnika prema njihovim stavovima o dvjema skupinama etioloških čimbenika i njihovih interakcija: 1. ekološkim čimbenicima, te 2. njihovim navikama i ponašanju. Kontrolnu skupinu činili su bolesnici od koronarne bolesti kod kojih je dobro poznat utjecaj ovih čimbenika na nastanak njihove bolesti. Istraživanje nije uključivalo objektivno mjerenje ekoloških čimbenika, a saznanja o njihovoj prisutnosti u bolesnikovu okolišu dobivena su pomoću upitnika posebno sastavljenog za ovo istraživanje koji je prilagođen našim uvjetima. Ispitivanjem je obuhvaćeno 50 bolesnika s bronhijalnom astmom i 51 bolesnik s koronarnom bolešću. Razlike među skupinama određene su χ^2-testom s koeficijentom rizika od 5%. Rezultati su pokazali statistički značajnu razliku između astmatičnih i koronarnih bolesnika u stavovima o nizu rizičnih čimbenika. Ispitanici su živjeli podjednako u selu odnosno gradu, u sličnom ekološkom okruženju, ali su astmatični bolesnici držali da su štetni ekološki čimbenici više prisutni u njihovu okliišu i da su važni za nastanak njihove bolesti. Koronarni bolesnici smatrali su svoje loše životne navike i stresove važnima za nastanak bolesti.

Ključne riječi: *Astma, psihologija; Pobol, trendovi; Upitnici; Socioekonomski čimbenici; Stav prema zdravlju*