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Nałóg palenia tytoniu wśród pacjentów po zawale mięśnia sercowego

Tobacco addiction among patients after myocardial infarction

Streszczenie

Wprowadzenie. Palenie tytoniu stanowi ważny problem w zakresie zdrowia publicznego, wobec którego podjęto wiele strategii prewencyjnych. Jest to jeden z najbardziej niebezpiecznych i rozpowszechnionych nałogów, z powodu którego w Stanach Zjednoczonych umiera ponad 43 000 osób. Ryzyko przedwczesnej śmierci u osoby palącej przez całe życie jest o połowę większe niż u osób niepalących.

Cel. Celem badań była ocena częstości występowania nałogu palenia tytoniu wśród pacjentów po zawale mięśnia sercowego w aspekcie zalecanego całkowitego zaprzestania palenia tytoniu.

Materiał i metoda. Badaniami objęto 113 osób po zawale mięśnia sercowego. Wyniki zebrano metodą sondażu diagnostycznego za pomocą kwestionariusza ankiety, która zawierała pytania otwarte i pytania zamknięte oraz instrukcje dotyczące celu badań i sposobu udzielania odpowiedzi na poszczególne pytania. Wykorzystano również ankietę standaryzowaną o nazwie: Inwentarz Zachowań Zdrowotnych (IZZ), przeznaczoną do badania zdrowych i chorych osób dorosłych. Analizę statystyczną przeprowadzono w oparciu o oprogramowanie komputerowe STATISTICA 8.0 (StatSoft, Polska).

Wyniki i wnioski. Większość badanych (74,34%) nie pali tytoniu, u 25,66% (n = 29) występował nałóg palenia papierosów, z czego chęć zaprzestania palenia deklarowało większość osób, a tylko trzech badanych nie planuje zerwać z nałogiem. Większość chorych po zawale serca neguje nałóg palenia tytoniu.

Słowa kluczowe: palenie tytoniu, zawał serca , zaprzestanie palenia tytoniu.

Abstract

Introduction. Tobacco smoking poses a vital problem within the area of public health, which led to a number of preventive strategies. This is one of the most dangerous and most common addictions. Average annual mortality rate in the USA is 43 000 people as a result of tobacco smoking.The risk of early death due to complications caused by tobacco smoking of a person smoking throughout one's life is around 50%.

Aim. The aim of the study was to analyze the incidence of tobacco addiction among patients after myocardial infarction, in terms of a recommended total cessation of smoking.

Material and methods. The study included 113 patients after myocardial infarct. The data were collected with the use of a survey which contained both open ended and closed questions, as well as instructions referring to the aim of the study and the way particular questions should be answered. Also, a standardized questionnaire, known as the Health Behavior Inventory (HBI), was used in order to examine both healthy and sick adults. Statistical analyses were performed with the use of STATISTICA 8.0 (StatSoft, Poland) software.

Results and conclusions. The majority of respondents, 74.34%, were not addicted to tobacco smoking, 25.66% (n=29) admitted their being addicted to smoking and one of the fourth of those declared a will to give up cigarettes, while only three polled were not planning to stop smoking at all. The majority of the patients who had experienced myocardial infarction denies tobacco smoking.

Key words: tobacco smoking, myocardial infarction, smoking cessation.

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INTRODUCTION

Cigarette smoke contains at least four basic groups of components which have a negative effect on human organism, namely carcinogenic substances, irritants, carbon monoxide and nicotine [1].

The negative effect of nicotine results in lowering the amount of oxygen delivered to the heart muscle due to contracting blood vessels, including coronary arteries [2]. This is of particularly negative significance in people with existing changes of the coronary arteries since nicotine accelerates heart activity and increases oxygen consumption while simultaneously narrowing the arteries, which leads to transitory ischemia of the heart muscle. Also in people suffering from peripheral circulatory disorders nicotine significantly impairs blood inflow to the muscles of the limbs, resulting in their malnutrition and pain. This also contributes to developing thromboembolism due to adverse changes in anticoagulant and fibrinolytic agents [3]. Temporary increases in blood pressure, regardless of their causes, tend to become permanent in tobacco smokers, and elevated blood pressure results in a number of negative changes in the organism. Particularly, excessive mechanical pressure is exerted on the arterial walls, which damages their endothelium making it more permeable to atherogenic lipoproteins. Coronary arteriosclerosis develops more rapidly, which more easily results in heart attack in patients with hypertension [5].

AIM

The aim of the study was to analyze the incidence of tobacco addiction among patients after myocardial infarction, regarding the aspect of the recommended complete cessation of smoking.

The following individual aims were specified:

1. What is the incidence of tobacco addition in patients after myocardial infarction?
2. Do patients declare a will to give up their habit?
3. What makes the patients stop smoking tobacco?

MATERIAL AND METHODS

The method used in the study was a diagnostic survey and the technique employed was a questionnaire circulated among the patients, which used a standardized survey form known as the Health Behavior Inventory (BHI) intended to examine both healthy and sick adults [6].

The analyses covered 113 questionnaires filled in by the patients, with their consent.

The study was performed from October 2008 to January 2009 in south-eastern Poland, and the examinations comprised the patients of the Cardiology Department and the Intensive Cardiological Care Unit at the District Hospital in Przemyśl. The patients of these units were the inhabitants of Przemyśl and the neighboring towns and villages, as well as the sick referred for coronarography and invasive treatment from hospitals in Jarosław, Laubaczów, Ustrzyki Dolne, Lesko and Sanok.

The results obtained from the study were subject to a statistical analysis. The values of the analyzed measurable parameters were presented with the use of the mean value ($\bar{x}$) and standard deviation (SD), while those immeasurable were calculated with the help of cardinality and percentage. For the measurable features the normality of the analyzed parameters was assessed with the use of the Shapiro-Wilk test.

Two independent groups were compared with the help of Student's t-test, while for more than two groups the analysis of $(SD)^2$ variance was used. In order to detect the existence of relationships between the analyzed groups the χ^2 independence test was applied. The existence of interrelationships between two features was determined due to the use of R. Spearman's Rank Correlation Test.

A 5% error in reasoning and the resulting $p<0.05$ level of significance were adopted, suggesting the existence of statistically significant differences.

The statistical analyses were performed on the basis of the STATISTICA 8.0 (StatSoft, Poland) software.

RESULTS

The study comprised a group of 113 patients after myocardial infarction. Out of those, 25.66% were female patients, while 74.34% were male. The average age in the studied group was 61.14±10.54 years. The respondents below 55 years were accounting for 31.86%; 30.97% were 55-67 years old, while 37.17% were 75 or older. A slightly higher percentage of the patients came from the countryside (50.44%), whereas 49.56% of the respondents lived in urban areas (Table 1).

In most cases the respondents had secondary education (32.74%), whereas primary and vocational education was declared by 30.09% each, and only 7.08% of the polled had university degrees.

Regarding their professional activity, 45.13% of the respondents were retired, while 36.28% were pensioners, 15.04% were working people and 3.54% were unemployed.

Among the respondents, 25.66% (n=29) were addicted to tobacco smoking, in contrast to the majority of the patients, 74.34% (n=84). Smoking was more popular among male patients (30.95%), compared to female individuals (10.34%) (Figure 1).

The statistical analysis revealed a significant relationship between the occurrence of tobacco addiction and the patients' age ($p=0.00007$) and sex ($p=0.03$), whereas no significant dependence was observed regarding their place of residence ($p=0.12$) and the number of myocardial infarctions ($p=0.65$). In the course of examinations it was also noted that the respondents below 55 years of age (38.89%) smoked more frequently than those aged 55-64 (40.00%) or above 65 (2.38%). Smoking was also more often recorded among people coming from urban areas, (32.14%) rather than those from the countryside (19.30%). A statistical analysis did not reveal any significant relationship between the incidence of the addition and the educational background or occupational activities of the patients ($p>0.05$) (Table 2).

The analyses revealed that among the respondents who were smokers (n=29), 0.89 (n=26) admitted that they were planning to give up their habit, while only 0.11 (n=3) of the respondents did not intend to stop smoking at all (Figure 2).

The study demonstrated (Table 3, Figure 3) that the

TABLE 1. The characteristic of the studied group.

Social and demographic factors		N	%
Sex	female	29	25.66
	male	84	74.34
	total	113	100
Age	below 55	36	31.86
	55-65	35	30.97
	65 or more	42	37.17
	total	113	100
Place of residence	rural area	57	50.44
	urban area	56	49.56
	total	113	100
Education	primary	34	30.09
	vocational	34	30.09
	secondary	37	32.74
	higher	8	7.08
	total	113	100 %
Employment	employed	17	15.04
	unemployed	4	3.54
	pensioners	41	36.28
	retired	51	45.13
	total	113	100

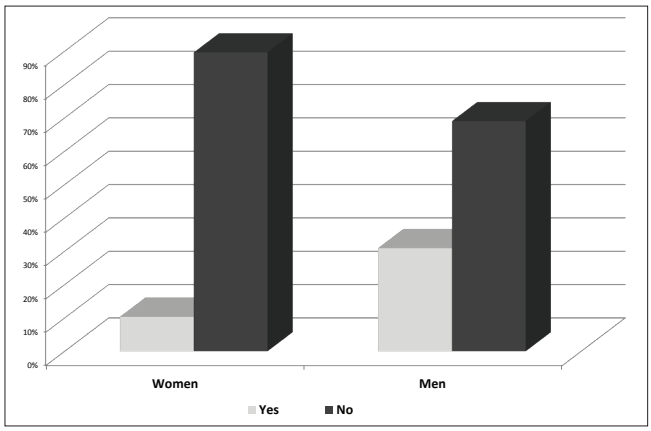

FIGURE 1. Structure of respondents according to smoking habit among men and women.

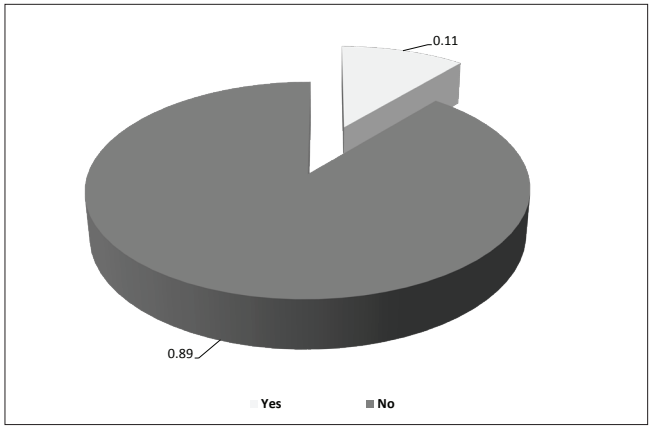

FIGURE 2. The people declaring cessation of tobacco smoking (fractions).

TABLE 2. The incidence of tobacco addition, regarding the sex, age, place of residence and the number of myocardial infarctions.

Demographic factors n %		Yes n %	No n %	Total	Statistical analysis
Age	below 55	14	22	36	Chi^2=19.001 p=0.00007*
		38.89%	61.11%	100.00%	
	55-65	14	21	35	
		40.00%	60.00%	100.00%	
	65 or more	1	41	42	
		2.38%	97.62%	100.00%	
total 25.66%		29	84	113	
		74.34%	100.00%		
Sex	female	3	26	29	Chi^2=4.80 p=0.03*
		10.34%	89.66%	100.00%	
	male	26	58	84	
		30.95%	69.05%	100.00%	
total 25.66%		29	84	113	
		74.34%	100.00%		
Place of residence	rural area	11	46	57	Chi^2=2.44 p=0.12
		19.30%	80.70%	100.00%	
	urban area	18	38	56	
		32.14%	67.86%	100.00%	
total 25.66%		29	84	113	
		74.34%	100.00%		
Heart attack	first	21	57	57	Chi^2=0.21 p=0.65
		26.92%	73.08%	100.00%	
	repeat	8	27	56	
		22.86%	77.14%	100.00%	
total 25.66%		29	84	113	
		74.34%	100.00%		

*Statistically significant differences or dependencies

TABLE 3. Reasons to give up smoking.

Reasons to give up smoking	n	%
fear of the disease	22	88.00
friends' pressure	3	12.00
family's insistance	7	28.00
financial issues	10	40.00
patient's own decision	7	28.00

Note: Values do not add up to 100% due to a possibility of giving several reasons

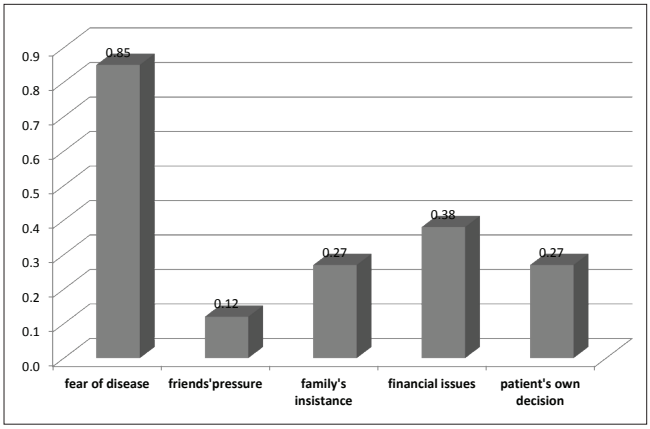

FIGURE 3. Reasons to give up smoking (fractions).

respondents who expressed a wish to give up their addiction wanted to do so due to the fear of the disease (0.85), because of their friends' insistence (0.12), family persuasion (0.27), for financial reasons (0.38), or as their personal resolution to quit (0.27).

DISCUSSION

Tobacco smoking is a vital reason leading to heart diseases. According to the estimates, ⅓ of adult males and ¼ of adult females in Poland are regular smokers [7]. Previous studies, Pol-MONICA and Pol-MONICA BIS [8], revealed a high percentage of smokers, which amounted to 57% in 1984 and decreased to 50% in 1993. Other studies performed in 2003 among the patients attending the specialist clinic at the Cardiology Institute in Anin revealed a reduction in the number of smokers as only 24.5% of the examined patients were still smokers [9]. The studies performed in the United States also demonstrate a decline in the incidence of smoking, which amounts to 2% annually, and the reduction in the number of smokers is supposed to reach 21% by the year 2020 [10].

Currently, special attention is given to the necessity of giving up smoking by people with circulatory diseases, which results in reduced mortality and the risk of recurring cardiovascular incidents reduced by 30% [11].

A number of European countries introduced also a ban on smoking in all closed public spaces. In order to prevent the harmful effects of passive smoking. A study carried out in Scotland which had adopted such a ban and in England where no such regulations had been introduced, demonstrated a drop in hospitalization cases due to acute coronary syndromes by 17% in Scotland and merely by 4% in England. It was emphasized that 67% fewer hospitalization cases occurred among non-smokers, while the total decrease in the number of hospitalizations was caused by the lower number of smokers [12].

The study revealed that 25.66% (n=29) of the patients were addicted to tobacco smoking, while 0.89 expressed a wish to give up their habit.

During the study it was also noted that the respondents aged up to 55 (38.89%) were smokers more often than those aged 55-65 (40.00%) or people above 65 years of age (2.38%). The analyses proved that the addiction was present more commonly in men (30.95%) than in female patients (10.34%). Also, people coming from urban areas (32.14%) smoked more often than the residents of the countryside (19.30%).

The respondents who were smokers in 0.89 (n=25), admitted that they intended to give up their habit, while only 0.11 were not planning to stop smoking.

In most cases (0.85), the respondents wanted to give up smoking for fear related to the disease, for financial reasons (0.38) or due to their own firm resolution to quit (0.27). The reason could be also the insistence of their family (0.27) or friends (0.12).

Regarding the major aim of the present study, the analyses demonstrated that tobacco smoking addiction occurs in patients after myocardial infarction and is admitted by more than one in four individuals in the studied group.

CONCLUSIONS

1. Patients after myocardial infarction still happen to continue smoking tobacco, yet this refers to a definitely smaller group of the respondents.
2. The incidence of myocardial infarction among smokers results in their quitting the habit, and only individual patients are not planning to give up smoking.
3. The most popular reason for smoking cessation declared by patients after myocardial infarction is their fear of the disease, financial aspects, and also their firm resolution to give up the habit, while less frequently it is the insistence of the family or friends.

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