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Wpływ cukrzycy typu 2 na aktywność zawodową osób po przebytym ostrym zespole wieńcowym

Streszczenie

Wstęp. Cukrzyca typu 2 (Diabetes mellitus typus 2 – DM t.2) jest chorobą cywilizacyjną o charakterze społecznym. wywierająca trudne do przecenienia skutki zdrowotne oraz społeczno-ekonomiczne. Cukrzyca pogarsza przebieg wielu chorób w szczególności chorób układu krążenia.

Cel. Celem naszej pracy było określenie wpływu cukrzycy typu 2 na aktywność zawodową osób, które przebyły ostry zespół wieńcowy (OZW).

Materiał i metody. Badaniami objęto 8640 osób po przebytym OZW (5642 mężczyzn i 2998 kobiet) leczonych w Sanatorium Uzdrowiskowym dla Rolników w Nałęczowie w latach 2005-2009.

Wyniki. Wśród osób z OZW aktywnych zawodowo przed jego wystąpieniem było 50,4% pacjentów z cukrzycą i 56,7% osób bez cukrzycy (p<0,001). W zależności od płci odsetek osób aktywnych zawodowo do wystąpienia OZW wynosił 60,8% mężczyzn z cukrzycą i 61,6% mężczyzn bez cukrzycy (p=0,65) oraz 37,5% kobiet z cukrzycą i 46,7% kobiet bez cukrzycy (p<0,001). Po przebytym OZW aktywnych zawodowo pozostawało 20,1% cukrzyków i 28,8% pacjentów bez cukrzycy (p<0,001). Odpowiednio odsetek ten wśród mężczyzn wynosił 27,9 % w cukrzycy i 35,2% bez cukrzycy (p<0,001), zaś wśród kobiet 10,6% w cukrzycy i 15,7 % nie obciążonych cukrzycą (p<0,001).

Wnioski. Cukrzyca istotnie częściej prowadzi do konieczności zaprzestania aktywności zawodowej u mężczyzn i kobiet po przebytym OZW w porównaniu do osób bez cukrzycy. Pierwotna i wtórna profilaktyka cukrzycy mogłaby przyczynić się do zmniejszenia społecznych kosztów braku aktywności zawodowej u chorych.

Słowa kluczowe: cukrzyca typu 2, ostry zespół wieńcowy, epidemiologia.

Type 2 diabetes as a factor influencing the professional activity of patients after acute coronary syndrome

Abstract

Introduction. Type 2 diabetes (Diabetes mellitus typus 2–DM t.2) is a civilization disease of a social character exerting health and socio-economic effects difficult to overestimate. Diabetes deteriorates the course of many diseases, especially those of a cardiovascular nature.

Aim. The objective of the presented study was determination of the effect of type 2 diabetes on the occupational activity of patients who had undergone an Acute Coronary Syndrome (ACS).

Material and methods. The study covered 8,640 patients who had undergone an ACS (5,642 males and 2,998 females) treated at the Spa Sanatorium for Farmers in Nałęczów during the period 2005–2009.

Results. Among those who had undergone an ACS and had been occupationally active before the event, there were 50.4% of patients with diabetes and 56.7% without diabetes (p<0.001). According to age, the percentage of patients who had been occupationally active before the occurrence of an ACS was 60.8% of males with diabetes and 61.6% without diabetes (p=0.65), and 37.5% of females with diabetes and 46.7% without diabetes (p<0.001). After undergoing an ACS, 20.1% of patients with diabetes and 28.8% of those without diabetes remained occupationally active (p<0.001). This percentage among males was 27.9 % with diabetes and 35.2% without diabetes, respectively (p<0.001), while among females – 10.6% with diabetes and 15.7 % without diabetes (p<0.001).

Conclusions. Diabetes significantly more frequently leads to the necessity for discontinuing occupational activity in males than females with a history of ACS, compared to patients without diabetes. Primary and secondary prophylaxis of diabetes could contribute to the reduction of social costs caused by the lack of occupational activity among patients.

Keywords: diabetes mellitus type 2, acute coronary syndrome, epidemiology.

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INTRODUCTION

Diabetes is classified as a civilization disease due to the relationship between its occurrence, civilization progress and improving standard of living, especially with regard to the supply of calories. Considering its prevalence and effects, diabetes is also called a social disease. It is estimated that approximately 5.0% of Polish inhabitants are affected by diabetes. In recent decades, a great increase has been observed in the number of diabetic patients, especially those with type 2 diabetes. Diabetes shortens the life span, impairs its quality, and contributes to less favourable prognoses of concomitant diseases, and it is an especially burdening factor in the course of cardiologic disorders [1-4].

AIM

The objective of the presented study was determination of the effect of type 2 diabetes on the professional activity of patients who had undergone an acute coronary syndrome.

MATERIAL AND METHODS

The study covered 8.640 patients with a past history of ACS (5.642 males and 2.998 females) treated at the Spa Sanatorium for Farmers in Nałęczów during the period 2005-2009. In the case of occurrence of ACS in patients with the diagnosis of diabetes, those in whom ACS occurred after diagnosing diabetes, or who had DM t.2 diagnosed during hospitalization due to ACS, were enrolled in the study. The percentages of patients professionally active prior to and after ACS were compared with those with and without diabetes.

The NcNemara test was applied in order to evaluate the significance of the difference in the number of professionally active patients who had undergone ACS, with respect to that number prior to the event. The significance of the differences between the groups of patients with and without diabetes, from the aspect of the percentage of those who were occupationally active, was evaluated by means of chi^2 test. The analyses were performed considering the total population in the study, and in the groups of males and females. The p values $p<0.05$ for two-tailed test, were considered as statistically significant.

RESULTS

From among 8.640 patients who had undergone ACS, 1.417 (783 males and 634 females) had a diagnosis of type 2 diabetes.

Prior to the occurrence of ACS, the percentage of professionally active patients with diabetes was lower than that without diabetes ($p<0.001$). No significant differences were observed between the professional activity of males with and without diabetes ($p=0.65$). Among females, the percentage of those who were professionally active and had diabetes was lower than that of those without diabetes ($p<0.001$).

Professional activity of the respondents who had undergone an ACS event, significantly decreased, both among diabetic and non-diabetic patients ($p<0.001$), this activity being significantly lower in patients with than without diabetes. This was noted considering the total number of patients ($p<0.001$), also males ($p<0.001$) and females ($p<0.001$).

TABLE 1. Comparison between professionally active patients until the occurrence of ACS and after the event.

Patients	Diabetic patients (%)	Non-diabetic patients (%)	Total (%)	p
All patients prior to ACS	50.4	56.7	55.7	<0.001
All patients after ACS	20.1	28.8	27.4	<0.001
Males prior to ACS	60.8	61.6	61.5	0.65
Males after ACS	27.9	35.2	34.2	<0.001
Females prior to ACS	37.5	46.7	44.7	<0.001
Females after ACS	10.6	15.7	14.6	<0.001

DISCUSSION

Due to the high prevalence, chronic character and numerous complications of type 2 diabetes, the costs of treatment of this disease constitute a significant burden for health care systems worldwide [5] The direct costs of treatment of type 2 diabetes cover drugs and medical material cost reimbursement, as well as expenditures for ambulatory and hospital care. Indirect costs for the State budget result from disability related to diabetes and its complications, which lead to sick absenteeism at work and, consequently, the payment of health allowances due to incapability for work. Under Polish legal regulations, a person incapable for work is an individual who totally or partially has lost the ability to perform paid work due to the disruption of body efficiency, with no prognoses of regaining capability for work after re-qualification [6]. In Poland, it is difficult to precisely specify the indirect costs of treatment of type 2 diabetes, although the CODIP study (Cost of Diabetes Type 2 in Poland) allowed estimation of these costs at approximately 6 billion PLN annually, which constituted about 75% of total expenditures for the treatment of diabetes [6].

The most important factors which condition the occurrence of disability in patients with type 2 diabetes are microangiopathic complications (diabetic neuropathy, retinopathy and nephropathy), and macroangiopathic complications (coronary disease, atherosclerosis, lower extremity atherosclerotic occlusive arterial disease, ischemic cerebral ischaemia [7]. A negative joint-effect of the above-mentioned complications on occupational activity among diabetic patients is also emphasized, as well as the negative role of depressive and cognitive functions disorders [8]. Cardiovascular complications, with the dominant role of coronary disease, constitute a part of the natural history of type 2 diabetes, and are the cause of 70-80% of deaths in this group of patients [9].

In the literature available, few reports have been found concerning the effect of diabetes and it complications on incapability for work. The majority of reports concern the United States where it has been confirmed that 19-25% of patients with type 2 diabetes show a permanent

or temporary incapability for performing paid work [9]. In the presented study, a half of patients with type 2 diabetes were not occupationally active prior to the occurrence of ACS, with females performing paid work significantly more rarely than males (38% vs. 61%). In the group of patients without diabetes who had undergone ACS, 29% of respondents were occupationally active, while among those with diabetes this percentage was significantly smaller – only 21%. It is noteworthy that among females with diabetes, who had undergone ACS, engagement in occupational activity was especially low – 11% (significantly lower than among females with a past history of ACS, but without diabetes, where 16% of patients were occupationally active). With respect to the subgroup of males, 35% of patients who had undergone ACS, but without diabetes, performed paid work, whereas among those with past ACS and diabetes this percentage was only 28%.

The limitation of the presented study is that it was conducted in a specific population group – farmers who received treatment at the Spa Sanatorium for Farmers in Nałęczów in the eastern region of Poland. In addition, it should be assumed that professional activity may be modulated not only by the state of health, but also by such factors as education level, age, and socio-economic conditions in an individual community (e.g. characteristic of the labour market). In order to evaluate more precisely the effect of type 2 diabetes and its individual complications, especially cardiovascular, it is necessary to carry out further population studies. Despite all the above-mentioned limitations of the study, it should be emphasized that among patients who had undergone ACS the professional activity was low, and concomitant diabetes additionally contributed to the decrease in the percentage of occupationally active patients, especially among females.

CONCLUSIONS

1. Diabetes significantly more often leads to the necessity to discontinue professional activity among males and females who had undergone ACS, compared to patients without diabetes.
2. Primary and secondary prophylaxis of diabetes would contribute to the decrease in the social costs of the lack of professional activity in patients.

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