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Erectile Dysfunction after Myocardial Infarction – Myth or a Real Problem?

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A B S T R A C T

Erectile dysfunction is a common problem whose relation to cardiovascular diseases has scientifically been proved, but it has not been studied sufficiently in patients recovering from myocardial infarction. The objective of this study was to establish the frequency of erectile dysfunction in patients recovering from myocardial infarction. We examined 89 patients (aged 30 to 75 years) included in the program of cardiac rehabilitation after myocardial infarction. The results were compared with 91 healthy examinees of the same age. Even 82% of the patients who recovered from myocardial infarction have problems with erectile dysfunction, compared to 42.9% of healthy examinees. The prevalence of erectile dysfunction increases with the age in both groups. In the group of patients recovering from myocardial infarction aged 30 do 39 years, the erectile dysfunction decreased after 6 months, while in other age subgroups and between controls, there were no significant changes in erectile dysfunction prevalence during the analysed time period. We concluded that erectile dysfunction is a significant problem in patients recovering from myocardial infarction. It should be recognized on time in order to provide a better life quality for the patient with a multidisciplinary approach.

***Key words**: erectile dysfunction, cardiovascular diseases, myocardial infarction, cardiac rehabilitation, quality of life*

Introduction

Erectile dysfunction (ED) is defined as an inability to have and maintain an erection during a satisfying sexual intercourse[1]. It has already been noticed that ED appears concurrently with the appearance of cardiovascular diseases (CVD) so the risk factors for the appearance of CVD and ED are the same (age, smoking, hypertension, diabetes, hyperlipidaemia, obesity)[2–5]. Moreover, the presence of ED is considered to be a predictive sign of a possible appearance or latent presence of CVD[6,7]. On the other side, ED in patients with ischemic heart disease is usually neglected as the physician's attention is paid mostly on the treatment of coronary disease. This problem is even more evident in patients recovering from myocardial infarction (MI), although it significantly affects the patient's quality of life. The aim of this study was to examine the frequency of ED in patients recovered from myocardial infarction (MI) and to compare it with the frequency of ED in healthy population of the same age.

Subjects and Methods

The study included 89 patients attending the program of cardiac rehabilitation after MI, aged from 30 to 75 (the mean age was 53.6 years). The control group consisted of 91 health volunteers of the same age (the mean age was 51.4 years).

All examinees filled a questionnaire[6], so called International Index of Erectile Function (IIEF), consisting of

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TABLE 1
INTERNATIONAL INDEX OF ERECTILE FUNCTION (IIEF)

1. How do you rate your confidence that you could get an erection?		Very Low 1	Low 2	Moderate 3	High 4	Very high 5
2. When you had erections with sexual stimulation, how often were your erections hard enough for penetration?	No sexual activity 0	Almost never/Never 1	A few times 2	Sometimes 3	Most times 4	Almost always/Always 5
3. During sexual intercourse, how often were you able to maintain your erection after you had penetrated (entered) your partner?	Did not attempt 0	Almost never/Never 1	A few times 2	Sometimes 3	Most times 4	Almost always/Always 5
4. During sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?	Did not attempt 0	Extremely difficult 1	Very difficult 2	Difficult 3	Slightly difficult 4	Not difficult 5
5. When you attempted sexual intercourse, how often was it satisfactory to you?	Did not attempt 0	Almost never/Never 1	A few times 2	Sometimes 3	Most times 4	Almost always/Always 5

5 questions (Table 1). The answers were evaluated 1 to 5, so the total amount could be 5 to 25 points. It is considered that a patient suffers from ED if the total sum amounts to 5–21 points. All examinees filled up the questionnaire twice– in the beginning of the treatment and after 6 months. The obtained data were statistically analyzed (Statistica 7.0 program for Microsoft Windows).

Results

The percentage of the patients suffering from ED was 82% in the patients who recovered from MI and 42.9% in the control group (Table 2). It is evident that the incidence of ED increases with age in both groups (Figure 1). In the group aged from 30 to 39, 52.9% of patients suffered from ED after MI and 22.2% of the control group examinees. Even 94.4% of the 70 year-old patients and older registered ED after MI and 61.1% of the control group examinees of the same age. A significantly higher percentage of ED was noticed in the patients who recovered from MI than in the healthy examinees of the same age. Figure 2 shows that the number of patients with ED is decreased after 6 months, but it is statistically significant only in the group of patients aged from 30 to 39. In the control group the number of examinees with ED was unchanged after 6 months compared to the initial examination (Figure 3).

TABLE 2
THE INCIDENCE OF ERECTILE DYSFUNCTION IN PATIENTS AFTER MYOCARDIAL INFARCTION AND HEALTHY EXAMINEES

Age (years)	Patients with MI (N=89)		Healthy subjects (N=91)	
	ED – yes (N / %)	ED – no (N / %)	ED – yes (N / %)	ED – no (N / %)
30–39	10 / 58.8	7 / 41.2	4 / 22.2	14 / 77.8
40–49	13 / 72.2	5 / 27.8	6 / 33.3	12 / 66.7
50–59	16 / 88.9	2 / 11.1	8 / 42.1	11 / 57.9
60–69	17 / 94.4	1 / 5.6	10 / 55.6	8 / 44.4
= 70	17 / 94.4	1 / 5.6	11 / 61.1	7 / 38.9

MI – myocardial infarction, ED – erectile dysfunction

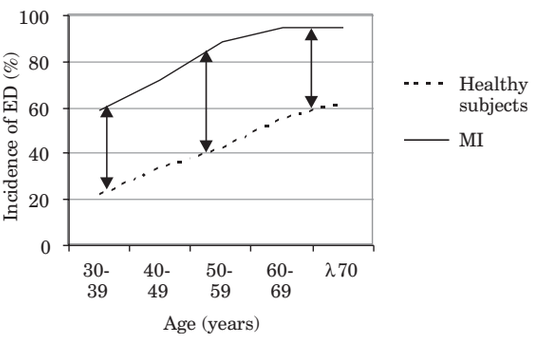

Fig. 1. The incidence of erectile dysfunction regarding the patient's age. MI – myocardial infarction, ED – erectile dysfunction.

Discussion

ED is a common disorder, recognized in different chronic diseases (such as heart failure, diabetes mellitus, peripheral artery disease, and hypertension)[8–10]. The connection between ED and CVD is well described[11–13]. Namely, it is supposed that the endothelial dysfunction happens in penile as well as in coronary arteries, resulting with ED[14]. Therefore, approximately 50% of patients visiting urologist for ED in fact suffer from a latent CVD[15]. The thesis on the ED as a possible indicator for a cardiovascular or systemic disease is not unusual[16,17]. Yet, although the ED is pronounced in stable coronary disease and its incidence is high (it is between 38% and 78%), the data about the appearance of ED in patients after MI are still insufficient[7,18–20]. Our results confirm previously established high incidence of ED in patients with CVD. The incidence of ED increases with age in healthy subjects (Figure 3), but especially in patients after MI

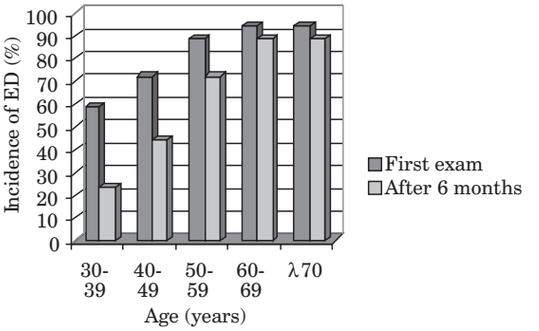

Fig. 2. The incidence of erectile dysfunction in patients after myocardial infarction. ED – erectile dysfunction.

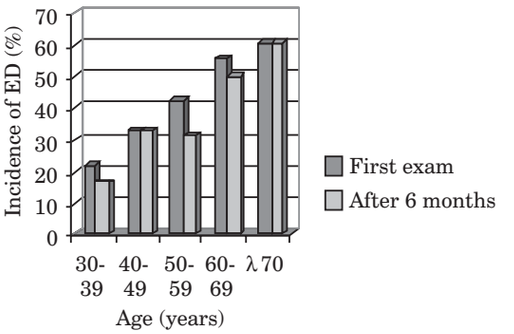

Fig. 3. The incidence of erectile dysfunction in healthy examinees. ED – erectile dysfunction

(Figure 2). Moreover, according to our research, the frequency of ED in patients after MI is even higher, reaching 94.4% and depending on the patients' age (Table 2, Figure 1). Its influence on the life quality of these patients is even stronger[21]. However, it is difficult to explain the aetiology of ED in patients who recovered from MI. Namely, the organic cause defined by endothelial dysfunction is only one of the possible causes. Also, most of the patients recovering from MI are treated with beta blockers. Does the effect of beta blockers lead to ED by itself, or the knowledge of patients about the possible beta blocker side-effects[22,23] intensifies their influence and causes ED in these patients? Our results confirm the already known fact that the incidence of ED is increased with the patient's age. But, in our research the incidence of ED is decreased after six months in patients recovering from MI, especially in the youngest group of examinees (30–39 years old). It can point to a strong psychological effect of overcome MI in younger patients than it was thought before. It is confirmed by the fact that psychological stress affects the normal male sexual cycle along with autonomous nervous system[24]. It confirms the statements of a research carried out by Vacanti LV et al. about the great importance of psychological factors in the appearance of ED. The combination of organic, pharmacological and psychological effects accounts for the appearance of ED which has become a serious public health problem[18]. Therefore, our results show that each patient included in the program of cardiac rehabilitation, should have routine ED test on the basis of previously determined criteria for ED establishing[5,25,26].

Early recognition of this problem and a multidisciplinary approach in its treatment (psychological and pharmacological treatment, exercises) can provide a better life quality for the patients[21–27].

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EREKTILNA DISFUNKCIJA NAKON INFARKTA MIOKARDA – MIT ILI ZNAČAJAN PROBLEM?

S A Ž E T A K

Erektilna disfunkcija je čest klinički problem koji je jasno povezan s nizom kardiovaskularnih bolesti. Njegova zastupljenost i značaj u bolesnika iza akutnog infarkta miokarda nisu dostatno istraženi, pa je cilj ovog ispitivanja usmjeren upravo na utvrđivanje učestalosti erektilne disfunkcije (ED) u rekonvalescenata od srčanog infarkta. Studija ispituje 89 bolesnika (dobi 30 do 75 godina) uključenih u program kardiološke rehabilitacije iza infarkta miokarda i rezultate uspoređuje sa skupinom od 91 zdravog ispitanika odgovarajuće dobi. Rezultati pokazuju da 82% bolesnika iza infarkta evidentira znakove ED, dok je navedeni poremećaj u kontrolnoj skupini zastupljen sa značajno nižim udjelom i iznosi 42,9%. Prevalencija ED u obje skupine jasno korelira s dobi ispitanika. U bolesnika starih 30 do 39 godina zabilježeno je značajno smanjenje ED tijekom šestomjesečnog praćenja koje se u ostalim dobnim skupinama iza infarkta, kao ni u kontrolnih ispitanika ne bilježi. Erektilna je disfunkcija značajan problem u bolesnika iza infarkta miokarda čije pravovremeno utvrđivanje može biti od presudnog značaja za multidisciplinaran tretman s ciljem značajnog poboljšanja kvalitete života.