Folia Cardiologica 2015
tom 10, nr 4, strony 251–257
DOI: 10.5603/FC.2015.0046

ISSN 2353–7752

Sexuality in women with metabolic syndrome

Seksualność kobiet z zespołem metabolicznym

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Abstract

Introduction. Metabolic syndrome (MetS) is a risk factor for cardiovascular disease, and may be diagnosed in one in four adults worldwide. Since sexual dysfunction may occur in as many as 19–63% females, the following issues were addressed in the presented study: 1) Is there a relationship between metabolic syndrome and sexual disorders in female patients with MetS? 2) What is the potential impact of diet on occurrence of female sexual dysfunction?

Material and methods. The study involved 99 regularly menstruating women, of which 71 patients were diagnosed with metabolic syndrome (those were assigned to study group), and 28 patients did not have metabolic abnormalities (control group). All subjects underwent physical examination, including basic anthropometric measurements, and biochemical blood tests were performed. Dietary intake was analyzed quantitatively and qualitatively using a three-day dietary recall. Participants were also asked to fill in questionnaires concerning their sexual life, and overall quality of life.

Results. There were no age differences between the groups. Number of meals per day was lower, and total caloric value was higher in MetS group. Women with metabolic syndrome were less sexually active, and found themselves less sexually attractive as compared to control group. In the MetS group, Mell-Krat SFM score was lower than in control group (44.6 ± 12.5 vs. 56.2 ± 5.7, $p < 0.001$), which indicated a higher incidence of female sexual dysfunction. Similar results were found using FSFI Scale (23.4 ± 10.4 vs. 28.3 ± 7.8, $p = 0.005$). Evaluation with SF-36 quality of life questionnaire showed no differences between the groups.

Conclusions. 1. The number of meals per day is lower, but the total dietary caloric value is higher in women with metabolic syndrome than in control group not having MetS. 2. Women with metabolic syndrome are less sexually active, and have less satisfactory sexual relations than healthy females. 3. There is no difference in quality of life between women with and without metabolic syndrome. 4. Dietary habits have no impact on overall quality of life, quality of sexual life or occurrence of sexual disorders.

Key words: sexuality, sexual function disorders, metabolic syndrome, quality of life, diet

(Folia Cardiologica 2015; 10, 4: 251–257)

Introduction

Metabolic syndrome (MetS) consists of various coinciding and interrelated metabolic conditions, which increase the risk of developing type 2 diabetes and cardiovascular disease. One in four adults worldwide (of more than 20 years of age) has MetS, according to data from literature. In United States, up to 34% of general population fulfills the diagnostic criteria of MetS according to ATPIII and AHA/NHBLI definitions [1]. The WOBASZ study in Poland revealed that 21.7% men and 25.5% women in the analyzed population fulfilled IDF criteria for metabolic syndrome diagnosis [2]. In Japan, researchers could identify 7.8% persons with MetS using the same criteria [3].

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Metabolic syndrome increases the risk of cardiovascular disease but also contributes to development of endocrine conditions, including type 2 diabetes as well as gastrointestinal disease, malignancy, depressive disorders, chronic renal disease, and sexual disorders [4–6]. The issues of sexual health, and its impact on quality of life have recently become subjects of debate. Sexual dysfunction is being investigated and addressed predominantly in men, who often suffer from erectile dysfunction related to cardiovascular disease [7]. Issues of female sexual life have not come to the spotlight as yet. However, female sexual dysfunction is not a negligible problem, and requires more study. It is estimated that sexual dysfunctions affect 19–63% women worldwide, and some authors suggest the prevalence may be up to 71% in general population. In USA, this kind of dysfunction occurs in 25–63% women [8]. Hayes et al. [9] identified 11 of 1,248 studies concerning this issue, and found out that 64% women (16–75%) suffered from diminished desire, 35% (16–48%) had orgasmic difficulty, 31% (12–64%) hade arousal difficulty, and 26% (7–58%) experienced pain. The report on sexuality in Poles (Raport Seksualność Polaków) by Lew-Starowicz [10] points out that decreased sexual needs concern 25% Polish women, 20% experience difficulties of arousal, 17% have too seldom orgasm, and 8% have no orgasm at all. Dyspareunia was reported by 13% Polish females, and *vaginismus* by 2% women. The issue of female sexuality is a complex one, which makes the study on problems underlying sexual dysfunction particularly challenging. Psychological factors are named in first place, and other issues include age, partner-related problems, lower socioeconomic status, lower education, chronic disease (diabetes, dyslipidemia, metabolic syndrome, ischaemic heart disease, overweight or obesity, uncompensated thyroid disorders). Other possible causative factors that should be named include previous physiological labors, abortions, pelvic dysfunction, depressive disorders, previous negative sexual experience, tobacco smoking, and medication with antihistaminic agents, antiepileptics, anxiolytics, antidepressants, hormonal contraception, hormonal replacement therapy, antiandrogens, antiestrogens or malignancy treatments [11–13]. Risk factors of female sexual dysfunction include cardiovascular disease and predisposing conditions such as metabolic syndrome (MetS). Prophylaxis and treatment of MetS begins with non-pharmacological measures, including dietary modification.

The presented study was aimed to analyze prevalence of sexual dysfunction in regularly menstruating women, and to investigate aspects of sexuality in women with metabolic syndrome as compared women with normal metabolic function. Furthermore, impact of diet on quality of sexual life, and issues of quality of life were investigated.

Material and methods

Analysis included 99 women with regular menstrual cycles. Patients presented various levels of education, sexual activity, and different marital status. Of those, 71 females were included in the study group, and 28 in the control group. Women in study group fulfilled criteria of metabolic syndrome according to IDF, NHLBI, AHA, WHF, IAS, and IASO 2009 [14]. Inclusion criteria were the following: giving informed consent to participation in the study, having regular menses, age ≥ 25 years, no psychic disorders (untreated or on specialist treatment), no major disease of adverse prognosis, not taking libido-affecting medication such as sedatives, psychotropic medication, oral contraception or antihistaminics. Women who fulfilled diagnostic criteria of metabolic syndrome were allocated to study group, whereas women in control group did not have MetS. Subjects not meeting the above described criteria were not included.

During the first appointment, anamnesis was taken, and physical examination performed, including measuring basic anthropometric parameters and arterial pressure. From each patient a blood sample was taken for evaluation of total cholesterol level as well as high-density lipoprotein (HDL) and low-density lipoprotein (LDL) cholesterol, triglycerides, fasting glucose, and high sensitivity C-reactive protein test (hs-CRP). The patients were instructed to take detailed dietary records for three consecutive days. Following the first appointment, the obtained clinical data were used for allocation to study or control group. During the second appointment, detailed dietary anamnesis was taken, and the patients were asked to fill in questionnaires concerning sexual needs and reactions. Instruments used included SFK/K Scale, Polish version of Mell-Krat Scale, commonly used in literature; Female Sexual Function Index (FSFI), a standardized questionnaire validated for use in Poland, evaluating satisfaction of sex life, level of sexual activity, partner relations and attitude to own femininity; and Short Form-36 (SF-36), standardized questionnaire evaluating quality of life, validated for use in Poland.

Results

There were no significant differences as to patient age and parity between the groups. Differences were, however, observed in anthropometric parameters (Table 1), biochemical test results, and arterial pressure, as intended in the study protocol (Table 2).

Analysis of dietary recall data revealed that women in study group had fewer meals per day but their meals had a significantly greater total caloric value (TCV) than those reported by subjects in control group. Energy intake from carbohydrates was slightly greater in study group, whereas energy consumption from proteins was significantly grea-

Table 1. Characteristics of study population

Parameter	Study group Mean value ± SD	Control group Mean value ± SD	p value (Mann-Whitney U test)
Age (years)	40 ± 7	38 ± 6	NS
Parity	2 ± 1	1 ± 1	NS
Body mass [kg]	93 ± 16	83 ± 19	0.004
BMI [kg/m^2]	34.7 ± 5.2	30.1 ± 6.7	0.0003
Waist circumference [cm]	102 ± 11	92 ± 15	0.0002
Hip circumference [cm]	115 ± 11	110 ± 12	0.0112
WHR	0.9 ± 0.1	0.8 ± 0.1	0.0005

SD — standard deviation; p — level of significance; NS — not statistically significant; BMI — body mass index; WHR — waist-to-hip ratio

Table 2. Test results in study population

Parameter	Study group, mean value ± SD	Control group, mean value ± SD	p value*
Systolic BP [mm Hg]	135.3 ± 12.0	117.9 ± 14.0	< 0.001
Diastolic BP [mm Hg]	85.5 ± 9.1	78.2 ± 10.2	< 0.001
TC [mg/dl]	193.3 ± 35.2	181.2 ± 25.4	NS
HDL [mg/dl]	53.9 ± 15.1	68.1 ± 14.5	< 0.001
LDL [mg/dl]	111.3 ± 30.3	97.9 ± 21.8	0.049
TG [mg/dl]	140.7 ± 63.0	75.5 ± 25.8	< 0.001
Fasting glucose [mg/dl]	97.8 ± 11.2	89.4 ± 6.2	< 0.001

*Level of statistical significance was adopted at p < 0.05; SD — standard deviation; p — level of significance; BP — arterial blood pressure; TC — total cholesterol; NS — not statistically significant; HDL — high-density lipoprotein cholesterol; LDL — low-density lipoprotein cholesterol; TG — triglycerides

ter in the same group. Total consumption of fats and fat variants, excluding n-3 fats, was not significantly different between the groups (Table 3).

Fewer patients in study group had a regular sexual partner (82% vs. 96%, p = 0.07), and were significantly less often sexually active (69% vs. 89%, p < 0.05). More females in control group described physical contact with their partners during the last year as "very nice" (57% vs. 31%, p < 0.05). Patients in study group more often described their physical contacts as "quite nice" (27% vs. 11%, p < 0.05) or "not really nice" (7% vs. 0%, p > 0.05). Significantly more respondents in control group stated that number of sexual contacts during the last year was satisfactory for them (82% vs. 51%, p < 0.05). On the contrary, women in study group thought they had too few intercourses (35% vs. 14%, p < 0.05).

Significantly more patients in study group did not express their opinion on own femininity and sexual attractiveness as compared to control group (49% vs. 21%, p = 0.01), whereas in the latter group more respondents felt truly feminine, and declared no sexual problems (61% vs. 23%, p = 0.0003). Besides, patients in control group more often declared having no sexual dysfunction (82% vs. 59%, p < 0.05). When asked about occurrence of particular sexual problems (Fig. 1), subjects in study group more often responded positive. These were decreased sexual needs (44% vs. 14%, p < 0.05), having fewer orgasms (23% vs. 7%, p > 0.05), not having orgasms (7% vs. 0%, p > 0.05), having problems with lubrication (8% vs. 4%, p > 0.05) or experiencing pain (8% vs. 4%, p > 0.05).

Analysis of data concerning sexual functions revealed significantly lower global FSFI score in study group when compared to control group (23.4 ± 10.4 vs. 28.3 ± 7.8, p = 0.005). Patients in study group had both lower global score, and lower scores for respective domains, which were summed up for calculation of the global score. Significant differences were found for desire, arousal, and lubrication domains (Table 4).

Patients in study group had lower Mell-Krat scores for sexual needs and reactions when compared to patients in control group (44.6 ± 12.5 vs. 56.2 ± 5.7, p < 0.001), which reflects a higher prevalence of sexual dysfunction in MetS patients. Quality of life assessment using SF-36 showed no significant difference as to the global score (Table 5), which was 56.0 ± 25.1 points in study group, and 46.5 ± 18.7 points in control group. Significant difference was observed in scores for physical functioning, with lower scores reflecting worse function in patients with metabolic syndrome.

Table 3. Total caloric value, number and composition of meals in study group versus control group

Parameter	Study group		Control group		p value (Mann-Whitney U test)*
	Mean value ± SD	Median value	Mean value ± SD	Median value	
Number of meals per day	3.7 ± 0.6	3.7	4.3 ± 0.5	4.3	0.00002
TCV per day (kcal)	1959 ± 501	1955.7	1556 ± 219	1577.2	0.00003
TCV from proteins [%]	16.6 ± 5.8	15.6	18.4 ± 4.3	17.4	< 0.05
TCV from carbohydrates [%]	51.7 ± 7.9	52.7	50.4 ± 6.7	49.6	NS
TCV from fats [%]	31.5 ± 6.5	30.7	31.8 ± 5.6	31.8	NS
TCV from saturated fats [%]	11.7 ± 3.5	11.5	11.0 ± 3.1	10.1	NS
TCV from monounsaturated fats [%]	12.8 ± 4.0	12,0	12,1 ± 2,2	12,0	NS
TCV from polyunsaturated fats [%]	4.8 ± 2.0	4.5	5.4 ± 2.0	4.6	NS
TCV from n-6 fats [%]	4.0 ± 1.8	3.6	4.4 ± 1.8	3.8	NS
TCV from n-3 fats [%]	0.8 ± 0.4	0.7	1.1 ± 0.5	1.0	0.01
n-6/n-3 ratio	6.3 ± 3.0	5.8	5.8 ± 3.6	4.6	NS

*Level of statistical significance was adopted at $p < 0.05$; SD — standard deviation; p — level of significance; TCV — total caloric value; NS — not statistically significant

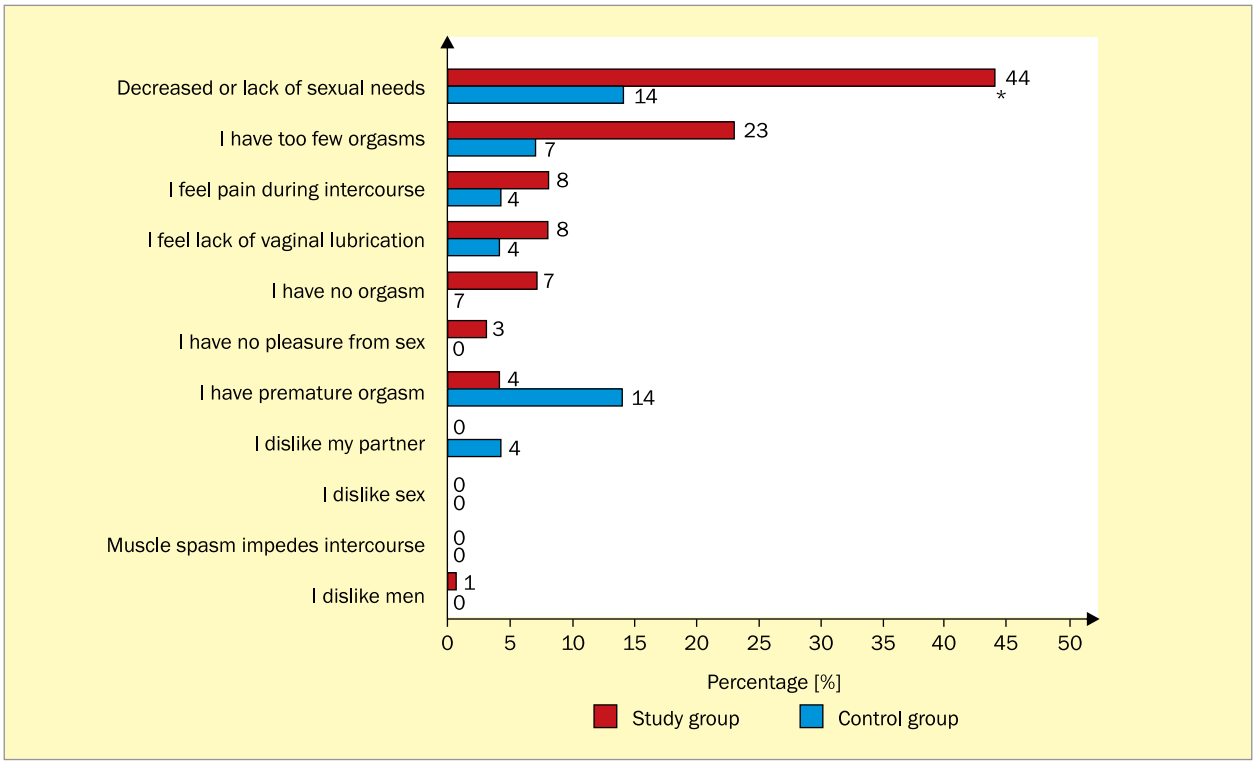

Figure 1. Answers to the question "Which of the following sexual problems concern yourself?" — comparison of study group and control group, *$p < 0.05$

Table 4. Quality of sexual life assessed by Female Sexual Function Index (FSFI) in study group versus control group

Domain	Study group		Control group		p (Mann-Whitney U test)*
	Mean value ± SD	Median value	Mean value ± SD	Median value	
Desire	3.0 ± 0.9	3.0	3.9 ± 0.7	3.6	< 0.001
Arousal	3.6 ± 1.8	4.2	4.3 ± 1.4	4.7	0.033
Lubrication	4.1 ± 2.1	4.8	5.1 ± 1.6	5.9	0.003
Orgasm	4.1 ± 2.1	4.8	4.9 ± 1.6	5.2	NS
Satisfaction	4.1 ± 2.1	4.8	4.9 ± 1.7	5.6	NS
Pain	4.5 ± 2.3	6.0	5.2 ± 1.8	6.0	NS
FSFI total	**23.4 ± 10.4**	**27.2**	**28.3 ± 7.8**	**30.8**	**0.005**

*Level of statistical significance was adopted at $p < 0.05$; SD — standard deviation; p — level of significance; NS — not statistically significant

Table 5. Quality of life in premenopausal women with metabolic syndrome (MetS) as compared to premenopausal patients without MetS

Category	Study group		Control group		p (Mann-Whitney U test)*
	Mean value ± SD	Median value	Mean value ± SD	Median value	
Physical functioning	11.4 ± 8.5	11.0	5.8 ± 6.7	3.0	0.002
Physical limitations	4.3 ± 6.5	0.0	4.6 ±5.6	5.0	NS
Pain	3.9 ± 2.0	4.0	3.8 ± 2.1	4.0	NS
General health status	11.0 ± 3.3	11.0	9.7 ± 2.3	10.0	NS
Physical aspect of quality of life	**30.5 ± 14.7**	**29.0**	**24.0 ± 12.1**	**20.5**	**NS**
Vitality	8.8 ± 3.5	9.0	8.7 ± 3.2	8.0	NS
Emotional limitations	3.9 ± 5.8	0.0	2.5 ± 5.0	0.0	NS
Social functioning	2.5 ± 2.0	3.0	2.1 ± 1.6	2.0	NS
Psychical health status	10.3 ± 7.2	9.0	9.2 ± 4.1	9.5	NS
Psychical aspect of quality of life	**25.5 ± 14.5**	**22.0**	**22.5 ± 10.6**	**21.0**	**NS**
Quality of life index	**56.0 ± 25.1**	**53.0**	**46.5 ± 18.7**	**46.5**	**NS**

*Level of statistical significance was adopted at $p < 0.05$; SD — standard deviation; p — level of significance; NS — not statistically significant

Discussion

Presented study revealed that women with metabolic syndrome more often have sexual dysfunction, poorer quality of sexual life, worse opinion of themselves as females and sexual partners as compared to healthy counterparts. Greater prevalence of sexual dysfunction in females with metabolic syndrome was reflected by lower Mell-Krat scores and FSFI scores in subjects with MetS. Esposito et al. [15] in their study also used FSFI scale for evaluation of sexual activity in women with metabolic syndrome, and found that patients with MetS had significantly lower scores as compared to control group (23.2 ± 5.4 vs. 30.1 ± 4.7, $p < 0.001$). Therefore, a greater prevalence of sexual dysfunction could be confirmed in women with MetS. Ponholzer et al. [16] reported correlation between metabolic syndrome and worse quality of sexual life. Patients with MetS, both pre- and postmenopausal, more often complained of sexual dysfunction due to pain during intercourse, orgasm difficulties, and decreased desire, having fewer and less satisfactory intercourses than control subjects. However, statistically significant difference was observed only in the latter domain. Postmenopausal women had more problems with arousal, and reported lower impact of sex life on their overall quality of life. On the contrary, Kim et al. [17] found no correlation between occurrence of sexual dysfunction and metabolic syndrome in women. These authors observed no significant difference in occurrence of female sexual dysfunction (FSD) in patients having metabolic syndrome as compared to healthy subjects (52.1%

vs. 55.1%). Moreover, no correlation was found between FSD and arterial hypertension, diabetes or dyslipidemia.

We found no direct impact of dietary habits on sexual dysfunction, whereas Esposito et al. [18] and Giugliano et al. [19] came to quite opposite conclusions. The former study showed that following Mediterranean diet for two years had a beneficial influence on general health status, and decreased prevalence of both metabolic syndrome and female sexual dysfunction. Authors of the latter study analyzed dietary habits, and observed that obesity, metabolic syndrome and arterial hypertension were least prevalent, dyslipidemias least pronounced, and diabetes best compensated in females following diet most compatible with Mediterranean model. These patients were most sexually active (65.1% vs. 54.2%, p = 0.01), and had fewer sexual dysfunctions as compared to control group (47.6% vs. 57.8%, p = 0.01).

There was no significant difference in quality of life of patients with metabolic syndrome when compared to healthy counterparts in our study. Of note, patients in study group had higher scores than control group (56.0 ± 25.1 vs. 46.5 ± 18.7), which in Polish version of the questionnaire reflects a poorer quality of life. Patients with metabolic syndrome reported significantly poorer physical functioning.

Conclusions

1. Female patients with metabolic syndrome eat fewer meals per day but have a greater total caloric consumption as compared to women not having metabolic conditions. 2. No significant correlation was found between total caloric value, percentage of TCV from respective food components, and quality of sex life or occurrence of sexual dysfunction in study group or healthy controls. 3. There was no difference in quality of life evaluated by patients with metabolic syndrome or healthy controls. Quality of life was not influenced by total caloric value and diet composition, neither in patients with metabolic syndrome nor in healthy female controls. 4. Women with metabolic syndrome were less physically active, and had less satisfactory sexual life than females with normal metabolic function. 5. Female patients with metabolic syndrome more often experienced sexual dysfunction than controls subjects not having metabolic conditions.

Conflict of interest(s)

None declared.

Streszczenie

Wstęp. Zespół metaboliczny należy do czynników ryzyka chorób układu sercowo-naczyniowego i można go rozpoznać nawet u co 4. dorosłego obywatela świata. W świetle znacznego rozpowszechnienia zaburzeń funkcji seksualnych u kobiet (19–63%) pojawia się pytanie, czy istnieje związek między zespołem metabolicznym a zaburzeniami funkcji seksualnych w tej grupie oraz jaki wpływ na ich występowanie może mieć sposób odżywiania.

Materiał i metody. W badaniu wzięło udział 99 regularnie miesiączkujących kobiet; 71 z zespołem metabolicznym (grupa badana) i 28 kobiet bez zespołu metabolicznego (grupa kontrolna). Wykonano badanie podmiotowe, pomiary antropometryczne oraz ciśnienia tętniczego; oznaczono parametry biochemiczne w surowicy krwi. Pod względem jakościowym i ilościowym oceniono 3-dniowy jadłospis, a także kwestionariusze dotyczące życia intymnego i jakości życia.

Wyniki. Badane grupy były jednorodne pod względem wieku. Kobiety w grupie badanej spożywały mniejszą liczbę posiłków w ciągu dnia o większej łącznej wartości energetycznej (1959 ± 501 kcal *v.* 1556 ± 219 kcal; p < 0,05). Kobiety z zespołem metabolicznym rzadziej deklarowały aktywne życie seksualne i czuły się mniej atrakcyjne seksualnie. W analizie potrzeb i reakcji seksualnych Mell-Krat uzyskiwały mniej punktów (44,6 ± 12,5 *v.* 56,2 ± 5,7; p < 0,001), co znaczy, że częściej występowały u nich zaburzenia sfery seksualnej; podobnie w skali FSFI (23,4 ± 10,4 *v.* 28,3 ± 7,8; p = 0,005). Na podstawie wyników kwestionariusza SF-36 nie wykazano różnic pod względem wskaźnika jakości życia między grupami.

Wnioski. 1. Kobiety z zespołem metabolicznym spożywają w ciągu doby mniej posiłków o łącznej większej kaloryczności. 2. Kobiety z zespołem metabolicznym mają mniej aktywne i mniej satysfakcjonujące życie seksualne niż kobiety bez zespołu metabolicznego oraz częściej doświadczają zaburzeń w sferze seksualnej. 3. Jakość życia kobiet z zespołem metabolicznym nie różni się od jakości życia kobiet bez zespołu metabolicznego. 4. Nie wykazano związku między sposobem odżywiania a jakością życia, jakością życia seksualnego ani występowaniem zaburzeń funkcji seksualnych.

Słowa kluczowe: seksualność, zaburzenia funkcji seksualnych, zespół metaboliczny, jakość życia, dieta

(Folia Cardiologica 2015; 10, 4: 251–257)

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Komentarz

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Problem zaburzeń funkcji seksualnych u kobiet, biorąc pod uwagę dostępne piśmiennictwo, jest rzadziej podejmowany od tematu zaburzeń funkcji seksualnych u mężczyzn. Może to wynikać ze złożoności zagadnienia i trudności z oceną tych zaburzeń w porównaniu z zaburzeniami u mężczyzn. Problemy z erekcją są ogólnie najczęściej poruszanym w piśmiennictwie tematem zaburzeń tej sfery. Podawana przez różnych autorów częstość występowania zaburzeń funkcji seksualnych u kobiet i duże rozbieżności częstości występowania tego problemu (19–71%) w poszczególnych pracach wskazują, że dalsze opracowania są niezbędne. Artykuł pt. „Seksualność kobiet z zespołem metabolicznym" Jowity Szeligowskiej, Sylwii Skorupskiej, Marcina Wełnickiego i Artura Mamcarza stanowi istotny wkład merytoryczny w badania nad zaburzeniami funkcji seksualnych kobiet polskiej populacji i jest jedną z niewielu prac poświęconych tym zaburzeniom w okresie przed menopauzą, zwłaszcza że uwzględnia subpopulację kobiet z zespołem metabolicznym.

Według danych uzyskanych z polskiego programu WOBASZ kryteria rozpoznania zespołu metabolicznego spełnia przeszło 1/4 populacji badanych kobiet. Poza zwiększaniem ryzyka chorób układu sercowo-naczyniowego znany jest negatywny wpływ zespołu metabolicznego na funkcje seksualne. Kiedyś uznawano, że zaburzenia funkcji seksualnych mają przede wszystkim podłoże psychiczne i powinny być leczone przez seksuologów,

psychiatrów czy psychologów. Jednak inne prace dotyczące tego tematu wskazują, że zaburzenia te mają w dużej mierze charakter organiczny. Negatywny wpływ na funkcje seksualne czynników składających się na rozpoznanie zespołu metabolicznego — zarówno u kobiet, jak i u mężczyzn — jest generalnie znany, ale niezbyt dokładnie poznany. Wpływ ten wynika przede wszystkim z towarzyszących zespołowi metabolicznemu zmian hormonalnych, stanu zapalnego i postępującej miażdżycy naczyń. W badanej w omawianej pracy populacji kobiet z zespołem metabolicznym wyniki uzyskiwane za pomocą poszczególnych kwestionariuszy służących ocenie funkcji seksualnych były jednoznacznie gorsze niż u kobiet bez zespołu metabolicznego. Wynika z tego, że jednym z celów terapii pacjentek z zespołem metabolicznym powinna być także poprawa w zakresie funkcjonowania seksualnego. Ciekawym aspektem omawianych badań jest wpływ zespołu metabolicznego i zaburzeń funkcji seksualnych na jakość życia — wszak sfera seksualności człowieka jest jednym z głównych czynników wpływających na tę jakość. W komentowanej pracy nie stwierdzono jednak takiego wpływu u kobiet z zespołem metabolicznym w porównaniu z grupą kontrolną, choć między innymi kobiety z tym zespołem czuły się mniej atrakcyjne seksualnie i relacjonowały istotnie gorsze funkcjonowanie fizyczne. Także dieta w populacji kobiet z grup badanej i kontrolnej zasadniczo się różniła. Rzadsze spożywanie posiłków, ale o zwiększonej kaloryczności, w grupie pacjentek z zespołem metabolicznym dopełnia obrazu osoby z zaburzeniami metabolicznymi, które sprzyjają rozwojowi chorób układu sercowo-naczyniowego.

Różnice we wnioskach w poszczególnych badaniach dotyczących omawianego tematu, w tym w przytaczanym badaniu Esposito i wsp., zapewne wynikają ze złożoności problemu samego zespołu metabolicznego, liczby czynników wpływających na kryteria rozpoznania oraz odmienne populacje badane, a co za tym idzie — różnice kulturowe (co ma znaczenie przy udzielaniu odpowiedzi w badaniach kwestionariuszowych). Ciekawe, do jakich wniosków doprowadziłoby porównanie profilu hormonów płciowych u pacjentek z dokonanym rozpoznaniem zespołu metabolicznego i bez tego rozpoznania w populacji kobiet uczestniczących w badaniu oraz czy zauważalny byłby wpływ ewentualnych różnic na funkcjonowanie seksualne — takie zależności są omawiane w piśmiennictwie. Wyniki badania wskazują, że u pacjentki z zespołem metabolicznym, w porównaniu z kobietą niespełniającą kryteriów rozpoznania tego zespołu, nie tylko zmieniają się masa ciała, obwód talii, ciśnienie tętnicze, stężenie lipidów czy glikemia, ale również pogarsza się funkcjonowanie seksualne. Warto o tym pamiętać, lecząc kolejną pacjentkę z zespołem metabolicznym, na przykład z powodu nadciśnienia tętniczego, w poradni czy na oddziale kardiologicznym. Ten interesujący temat wymaga z pewnością dalszych, pogłębionych badań.

Piśmiennictwo

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