

Arterial hypertension and female sexual dysfunction in postmenopausal women

**P. De Franciscis, G. Mainini, E.M. Messalli, C. Trotta, A. Luisi, E. Laudando, G. Marino
G. Della Puca, F.V. Cerreto, M. Torella**

Department of Obstetrics, Gynaecology and Reproductive Sciences - Second University of Naples, Naples (Italy)

Summary

Purpose: To evaluate female sexual dysfunction in hypertensive postmenopausal women and the effects of antihypertensive therapy. **Materials and Methods:** Female sexual dysfunction was assessed by the Female Sexual Function Index (FSFI) in three groups of postmenopausal patients: normotensive women (group A: 240 women), hypertensive women without therapy (group B: 220 women), hypertensive women on therapy (group C: 80 women). **Results:** The incidence of female sexual dysfunction was increased in group B compared to groups A and C. Healthy patients showed higher FSFI scores compared to hypertensive patients (groups B and C). Hypertensive-treated patients accounted for higher scores in all items compared to hypertensive patients without therapy. **Conclusions:** Essential hypertension significantly affects female sexual function. Physicians should recognize and properly manage FSD in hypertensive women.

Key words: Female sexual dysfunction; Hypertension; Postmenopause; Antihypertensive therapy.

Introduction

Female sexual dysfunction (FSD) is defined as a multifactorial problem including hypoactive sexual desire, arousal dysfunction, pain with intercourse (dyspareunia), tightening of the vaginal muscles to the point of discomfort and pain (vaginismus), and orgasmic dysfunction [1, 2]. Seventy-five percent of women experience sexual difficulties during their lifetime, and 50% of all married couples experience sexual dysfunction [2]; a marked increased incidence in postmenopause is associated with a decrease of estrogen levels resulting in progressive reduction of elasticity and lubrication of the vagina [3].

Until recently, most of these problems recognized psychological origins, but many medical conditions may be associated with increased risk of sexual dysfunction, including poor general health and cardiovascular disease [4-6]. This is probably most evident in essential hypertension which could theoretically affect most aspects of sexual functioning directly or indirectly through vascular problems, side-effects of medications, relationship problems, psychological disturbances, and other factors [7].

While a large body of evidence supports the impact of hypertension and of anti-hypertensive drugs on male sexual function [3], this topic remains underexplored in women, mainly in postmenopausal ones, although almost half of treated hypertensives are women. In this view, the aim of the present study was to evaluate the relationship between essential hypertension and FSD in a sample of postmenopausal women, and the effect of administration of anti-hypertensive therapy.

Materials and Methods

Five-hundred and forty women attending the outpatient menopausal clinic of the Second University of Naples were enrolled. Inclusion criteria were: spontaneous menopausal state lasting at least six months confirmed by plasma follicle-stimulating hormone (FSH) (> 40 IU/l) and estradiol (E2) (< 30 pg/ml) concentration, aged between 48 and 55 years and sexually active. Exclusion criteria were: vaginal dystrophy, diabetes or impaired glucose tolerance, uremia, multiple sclerosis, cancer, psychiatric disorders, cardiovascular diseases, urinary disorders, thyroid diseases, women with pelvic trauma, and alcohol and drugs assumption. Blood pressure (BP) was measured using a mercury sphygmomanometer and essential hypertension was defined as BP values equal to or greater than 140/90 mmHg, as by international classification of hypertension [8].

Three groups of patients were considered: normotensive patients (group A: 240 women) used as a controls, hypertensive patients without any antihypertensive treatment (group B: 220 women), patients on hypertensive therapy (group C: 80 women). FSD was defined as the persistent or recurrent decrease of sexual desire, the impairment of sexual act, as well as the presence of sexual impotence and pain after sexual contact. The Female Sexual Function Index (FSFI questionnaire) was used to evaluate FSD [9, 10]. FSFI questionnaire consists of 19 multiple-choice questions (and given a score from 0 to 5), used to investigate six areas: sexual desire (first two questions); excitement (from the third to the sixth question), lubrication (from the seventh to the tenth question), orgasm (from the 11th to the 13th question), satisfaction (from the 14th to the 16th question), and pain (from the 17th to the 19th question). FSD was defined as a score less than or equal to (\leq) 26.

Results

This study showed that the FSD was reported in 48/240 (20%) of normotensive women, 84/220 (38%) of women with untreated hypertension, and 22/80 (27%) of women on anti-hypertensive treatment. FSD has higher preva-

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lence (Figure 1) in women with essential hypertension compared with women with normal blood pressure, and declines with adequate blood pressure control. Healthy patients (group A) accounted for higher scores to FSFI compared to hypertensive patients (groups B and C), reflecting greater sexual desire, arousal, lubrication, satisfaction, more frequent achievement of orgasm, and less pain [9, 10]. Patients on hypertensive therapy (group C) accounted for higher scores in all items compared to hypertensive patients without therapy (group B): sexual desire (3.7 vs 2.7), arousal (4.1 vs 2.3), lubrication (4.3 vs 2.3), orgasm (3.0 vs 1.4), satisfaction (2.9 vs 1.4), pain (7.9 vs 8.7) (Figure 2).

Conclusions

Sexuality is a relevant determinant of well-being in postmenopause and is affected by many factors: while the effects of estrogen deficiency are well-studied, either directly to the genital mucous membrane dystrophy affecting dyspareunia, or indirectly through the negative influence on sexual desire, and orgasm, other factors that can negatively-affect sexual function are much less investigated. The interest of the literature has been recently aimed at the cardiovascular risk factors involved in FSD. Some authors [5] showed that women with metabolic syndrome have a higher prevalence of FSD compared with healthy controls, although the association remains still not exactly explained. In a previous work the authors observed a relationship between FSD and obesity, demonstrating that the latter is able to influence various aspects of sexuality [11].

A rise in blood pressure causing endothelial dysfunction and impaired release of nitric oxide (NO) and catecholamines [12] may be associated with sexual dysfunction. In fact, it is necessary that vascular systems properly works in order for a woman to experience a normal arousal; in any case, eliminating cardiovascular risk factors decreases the risk of sexual dysfunction [3]. Indeed, the female genital arousal response is a neurovascular process characterized by genital engorgement, swelling, and lubrication. Disorders of arousal include decreased labial and clitoral sensation and engorgement, as well as lack of vaginal smooth muscle relaxation. It appears that NO plays a key role in clitoral smooth muscle relaxation, while its role in the vagina remains controversial. Functional adrenergic receptors are expressed both in the clitoris and in the vagina and mediate norepinephrine-induced genital smooth muscle contraction. Thus, it seems that the main mediators of male sexual function (NO and catecholamines) exert the same effects on female genital tissue as well. Moreover, angiotensin II seems to play a pivotal role in the structural and functional changes of the clitoris and vagina while blockade of the renin-angiotensin axis protects the genital tissue from these abnormalities [13].

While many studies were carried out on sexual dysfunction in hypertensive male subjects [14], less information is available regarding women and all the data are

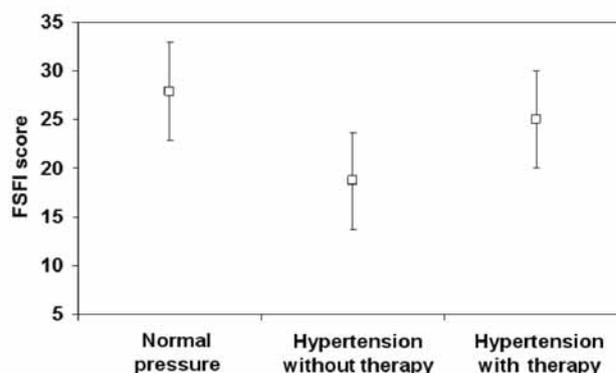


Figure 1. — FSFI score in the study groups.

referred to premenopausal patients: sexual dysfunction is more prevalent in hypertensive women compared to normotensive women, hypertensive women experience decreased vaginal lubrication, less frequent orgasm, and more frequent pain compared to normotensive women, successful control of hypertension is related to lower prevalence of female sexual dysfunction, even if hypertension per se results in female sexual dysfunction rather than the antihypertensive therapy [1, 13, 15].

Recently, it has been hypothesized that postmenopausal estrogen deficiency contributes to enhance the alteration of NO, catecholamines, and angiotensin II occurring with hypertension, therefore the risk of FSD may be increased in postmenopausal hypertensive women. To the best of the authors' knowledge, one study examined sexual function in postmenopausal women with heart disease and showed that anti-hypertensive medication was not a predictor of sexual problems [16]. The present study focused on a narrow category of postmenopausal women, and confirms the association between FSD and hypertension in agreement with the findings on premenopausal women. In addition, women treated with anti-hypertensives have less sexual dysfunction than hypertensive women without any pharmacological treatment to confirm the hypothesis that the reduction of blood pressure values is reflected in a lower degree of sexual dysfunction. As a consequence, adequate control of hypertension with medication not affecting sexual function can have a great impact on the quality of life of hypertensive patients [17].

The data in the present study need to be confirmed in larger case series, but they seem interesting in view of the high incidence of the metabolic syndrome in postmenopausal women, suggesting the need for a careful assessment of FSD that takes into account not only sexual parameters, but also new indicators, such as cardiovascular risk factors: because hypertension is a chronic disorder that requires patients to seek medical attention and visit their doctors regularly, such intense doctor-patient contact should normally provide an opportunity to address other health problems and therefore properly manage also FSD.

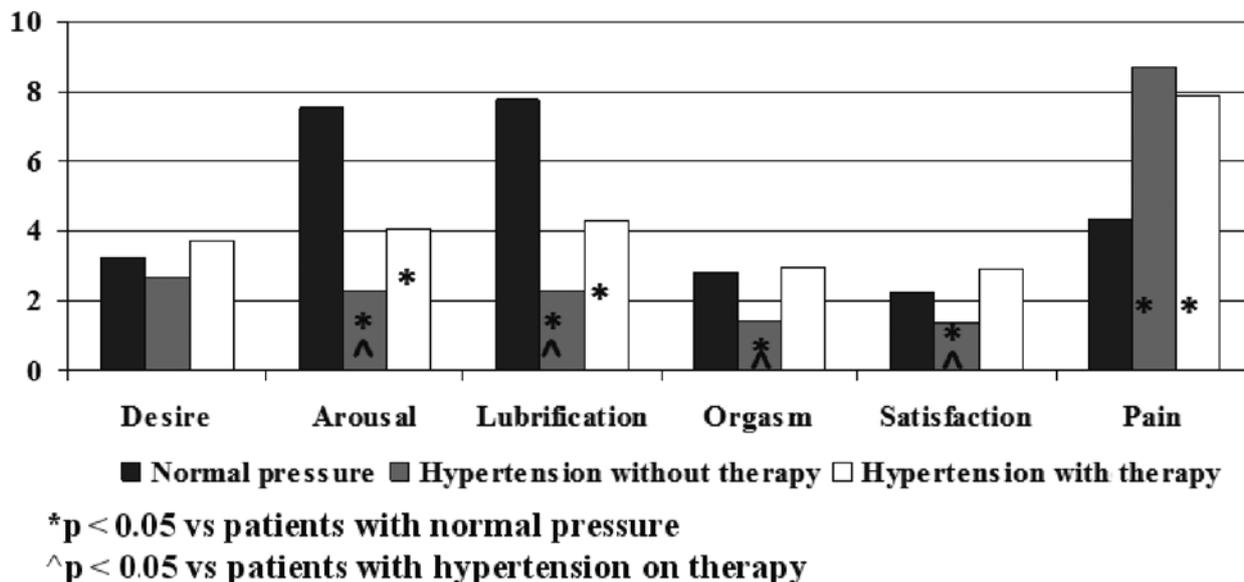


Figure 2. — Score in the six areas of FSFI questionnaire.

In conclusion, sexual function in post-menopausal women may be impaired by hypertension mainly when no pharmacological treatment is administered. Consequently, the assessment of sexual function should be considered for the management of hypertensive post-menopausal women.

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Address reprint requests to:
 G. MAININI, M.D., Ph.D.
 Department of Gynecology and Obstetrics
 S. Leonardo Hospital
 Castellammare di Stabia (Napoli)
 Via Armando Diaz, 77 - 80055 Portici (Napoli)
 e-mail: giampaolomainini@libero.it