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Sexual function in women with urinary incontinence

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To date limited data exists that addresses the impact of urinary incontinence on sexual function. In the present study, we assessed sexual functions in patients with urinary incontinence and compared with healthy continent subjects by means of Female Sexual Function Index (FSFI) questionnaire. A total of 21 premenopausal incontinent women (three stress incontinence, nine overactive bladder and nine mixed incontinence) were enrolled in the study, and 18 healthy continent subjects served as controls. All subjects were asked to complete FSFI questionnaire and each FSFI domain scores including desire, arousal, lubrication, orgasm, satisfaction and pain were calculated. The mean scores in each domain were compared between the groups. Mean age of subjects with urinary incontinence and controls were 39.5 ± 6.6 and 32.6 ± 9.1 y, respectively. All domain scores were significantly lower in incontinent women except for pain. Among the incontinence types, no significant difference was determined in all domains of FSFI. Urinary incontinence significantly reduces sexual functions in premenopausal sexually active women.
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Introduction

Urinary incontinence is a common health problem in women with reported prevalence of 11.4–73%.[1,2] It is a deteriorating factor for the quality of life of many women. Urinary incontinence has also been implicated to have an adverse effect on female sexuality.[3–8] Temml *et al*[4] reported that 25.1% of women with urinary incontinence had sexual impairment to some degree. Psychological distress, fear of incontinence during intercourse, embarrassment due to odor been suggested in the etiology sexual dysfunction.[6–9]

The association between urinary incontinence and sexual problems has been shown in the literature.[3–8] Since various study designs and different screening instruments were used in these studies, data on this subject are fragmentary.[10] However, in the majority of these studies, reliable validated questionnaires assessing the key dimensions of sexual function have not been used and data comparing sexual function with the type of incontinence are conflicting. It is difficult to establish from available data the exact relationship between urinary incontinence and sexual dysfunction and more quantitative measurements are needed on this issue.

In the present study, we aimed to evaluate the impact of urinary incontinence on sexual function using validated and reliable Female Sexual Function Index (FSFI) questionnaire in premenopausal women.

Materials and methods

A total of 21 consecutive, premenopausal sexually active incontinent women, who attended to our urogynecology unit, were enrolled in this study provided that they are eligible and 18 healthy, premenopausal sexually active continent volunteers served as controls.

All women were sexually active and had regular partnership during last 3 months. Exclusion criteria were as follows: (1) received medical or surgical treatment for urinary incontinence; (2) genital or urinary tract infection; (3) genital prolapse or lower genital tract abnormality that may lead to coital

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problem; (4) being at menopause determined by the history of women having menstrual irregularity or permanent cessation of menses; (5) receiving androgen therapy; (6) indwelling catheterization.

All patients underwent clinical evaluation including medical history, physical and gynecological examination, urine analysis and urine culture. Incontinent women were given prospective voiding diary and were asked to measure pads used in a week.

Multichannel cystomanometry studies were performed in the incontinent group. Urodynamic studies were carried out with a multichannel cystomanometry (Medical Measurement Systems B.V., the Netherlands, MMS software version 8.0). The techniques, measurements and diagnostic criteria were compatible with ICS guidelines.[11]

All incontinent patients and control group were asked to complete the FSFI questionnaire forms in the outpatient room. The FSFI is a validated and reliable measure for female sexual function.[12] It has 19 questions that assess six domains of sexual function including desire, arousal, lubrication, orgasm, satisfaction and pain.[12] Score ranges for items 3–14 and 1–19 are 0–5 and for items 1, 2, 15, 16 are 1–5.[12] The composite score is determined by the sum of domains multiplied by the domain factor. The full-scale score range is from 2 to 36 with higher scores associated with a lesser degree of sexual dysfunction.[12]

Each FSFI domain scores were calculated and mean scores in each domain were compared between control and incontinence group. The statistical analyses were performed using SPSS 10.0 software (SPSS, Chicago, IL, USA). Data were given as mean $\pm$ standard deviation. The differences of mean scores of FSFI domains were compared. Mann–Whitney *U* test and Kruskal–Wallis test was used for comparison of scores within the groups. Statistical significance was considered at $P<0.05$ for all statistical analyses.

Results

A convenient sample of 21 incontinent women and 18 healthy continent, sexually active women were enrolled in the study. Three of 21 patients were shown to have genuine stress incontinence and nine patients were shown to have overactive bladder with urge incontinence and nine patients had mixed urinary incontinence (combination of urgency and stress urinary incontinence). The mean age of subjects with urinary incontinence and controls was 39.5 ± 6.6 (range 28–50) and 32.6 ± 9.1 (range 22–51) years, respectively. Age was significantly higher in incontinent patients than control subjects ($P=0.01$) but not significantly different among incontinent types (37.9 ± 8.2, 37.3 ± 1.1 and 42 ± 5.4 y for overactive bladder, stress urinary incontinence and mixed incontinence, respectively). All women were in premenopausal state. The mean duration of incontinence was 13.1 ± 2.1 months and the mean number of pad used per week was 10.8 ± 1.5 in incontinent women. Among women with urinary incontinence, number of incontinence episodes per week and pads used per week recorded in 1 week voiding diary were similar (Table 1). Lower FSFI scores were obtained as the severity of incontinence was increased determined by increasing number of pads used in a week. The FSFI domain scores of two groups are shown in Table 2. In incontinent women, scores of all domains except pain were found to be significantly lower than the control subjects. Pain scores were not significantly different between incontinent women and control subjects. Among the incontinence types, no significant difference was determined in all domains of FSFI (Table 3).

Discussion

Although there is substantial amount of research concerning incontinence in literature, little is known regarding the impact of urinary incontinence on sexual function.[4,10] Published studies that address sexual function in women with urinary

Table 1 Frequency and severity of urinary incontinence among incontinent women

	Overactive bladder	*Stress urinary incontinence*	*Mixed incontinence*	*All*
Episodes of incontinence/week (mean $\pm$ s.d.)	20.3 ± 3.7	21 ± 1	20.8 ± 3.5	20.6 ± 3.2
Pad use/week (mean $\pm$ s.d.)	10.1 ± 1.5	11 ± 1	11.4 ± 1.5	10.8 ± 1.5

Table 2 Mean domain scores between the groups (mean $\pm$ standard deviation)

FSFI domains	*Urinary incontinence (n = 21)*	*Control (n = 18)*	P
Desire	2.8 ± 1	4 ± 0.8	0.003
Arousal	3.4 ± 1.4	4.4 ± 1	0.012
Lubrication	3.9 ± 1.2	4.9 ± 0.9	0.009
Orgasm	3.8 ± 1.3	4.6 ± 1	0.02
Satisfaction	4.1 ± 1.3	5.1 ± 0.9	0.014
Pain	4.1 ± 1.2	4.6 ± 1.6	0.12
Total	22.2 ± 5.7	27.7 ± 4.9	0.005

Table 3 Domain scoring (mean ± s.d.) according to the incontinence type

FSFI domain	*Overactive bladder (n = 9)*	*Stress incontinence (n = 3)*	*Mixed incontinence (n = 9)*	P
Desire	3 ± 0.8	3 ± 1.5	2.6 ± 1.2	NS
Arousal	3.3 ± 0.9	2.5 ± 2.5	3.8 ± 1.3	NS
Lubrication	4.1 ± 0.9	3.6 ± 1.8	3.9 ± 1.5	NS
Orgasm	3.6 ± 0.8	3.2 ± 2.1	4.1 ± 1.5	NS
Satisfaction	3.6 ± 1.2	4.8 ± 0.8	4.3 ± 1.5	NS
Pain	4.2 ± 1.3	3 ± 0.9	4.3 ± 1.0	NS
Total	21.9 ± 3.6	20.2 ± 7.8	23.2 ± 7.1	NS

NS: not significant.

incontinence have primarily used qualitative tests.[4] However, there are few studies addressing quantitative measurement of female sexuality.[13,14] Self-reported questionnaires on sexual status, like Dyadic Adjustment Scale, Sexual satisfaction and Drive subscales of Derogatis Sexual Functioning Inventory scale, Pelvic organ prolapse/urinary incontince sexual questionnaire (PISQ), Incontinence Impact Questionnaire-7 and sexual history form-12 were used in some studies to quantify the functions of female sexuality.[7,13,14] In our study, we used FSFI, which is a validated and reliable measure for female sexual function and has domains including the phases of female sex response cycle and pain. Using FSFI, to our knowledge, our study is the first to show the effects of incontinence on sexual function in premenopausal women. However, a significant limitation of our study is the small sample size used.

Sexual dysfunction in patients with urinary incontinence may be related to both emotional and organic factors.[6,8,10,15–17] In the present study, in order to minimize the role of organic factors, we excluded the patients who have genital prolapse and major genital abnormalities, history of previous incontinence or genital surgery. Additionally, we excluded the women in menopausal state. The exclusion of menopause in this patient group excludes the effects of estrogen insuffiency as well as aging which are both important factors for female sexual function.[15,16] Thus, many factors that may be associated with sexual dysfunction other than urinary incontinence was eliminated by selection of this group of patients.

In our study, sexual impairment in incontinence types was also evaluated. Yip *et al*[13] demonstrated the unfavorable effects of stress incontinence and detrusor overactivity on sexual function. There are some reports that show high level of sexual dysfunction in patients with detrusor overactivity or stress urinary incontinence.[5,18] We have not determined any significant difference in incontinence types in terms of FSFI domains. However, it should be emphasized that our study population size is too small to draw any conclusions regarding incontinence types. It is still unclear which incontinence type is more likely to influence sexual function and this issue needs to be further investigated.

In this study, we have found lower scores of FSFI in incontinent women compared to control subjects. However, the lower scores of incontinent women may not necessarily represent a clinically significant sexual dysfunction. The clinical relevance of lower domain scores and how bothersome sexual impairment was to women's quality of life over urinary incontinence need to be elucidated with further studies. Since normative data on the domain scores of FSFI in this population is scarce, it is difficult to determine the exact relationship between lower scores and level of sexual dysfunction requiring medical assistance. Additionally, women may overlook or undisclose sexual problems and give priority to urinary leakage as the most bothersome problem. In our study, while all women stated that they would also ask medical advice for their sexual problems, primary cause of their admission to our clinic was urinary incontinence other than sexual dysfunction.

In the present study, pain scores were not significantly different between incontinent and control patients. Since our knowledge about the pathophysiology of sexual dysfunction in incontinent women is limited, we cannot elucidate this similarity in pain scores. The FSFI pain questionnaire detects pain as during and following sexual intercourse which determines two aspects of sexual pain disorder dyspareunia and other sexual pain disorders.[12,16] In our patients secondary factors that may be involved in the etiology of dyspareunia, such as urinary tract infection, vaginal atrophy, vaginal and vulvar infection and previous surgery, were eliminated.[16,19–21] This may play role in the similarity of pain scores between the groups.

Our results have shown that urinary incontinence significantly reduces sexual functions in premenopausal sexually active women. This study also demonstrates lower scores of FSFI domains representing women's sex response cycle in incontinent women compared to normal healthy control subjects. Sexual dysfunction is a prevalent and distressing problem in women with urinary incontinence and seems to affect the satisfaction rate and sexual quality of life of these patients. Assessment and management of this problem, as a part of routine evaluation should be considered in women presenting with urinary symptoms.

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