VARIOUS TYPES OF URINARY INCONTINENCE AND ASSOCIATED RISK FACTORS AMONG WOMEN ATTENDING URODYNAMIC CENTER AT SURGICAL TEACHING HOSPITAL IN SULAIMANI CITY

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ABSTRACT

Background

Urinary incontinence is a complaint involving the involuntary leakage of urine. It has a significant health problem with psychological, social and hygienic effects on the lives of both women and their families.

Objectives

The present study aimed to determine different types of urinary incontinence among married women, identify factors that affect this condition, and discover how urinary incontinence and related factors are correlated.

Patient and Methods

The study was carried out in a Urodynamic Center at Surgical Teaching Hospital in Sulaimani City. The present descriptive case-control study was carried out on a purposive sample of 100 incontinent women admitted to the Urodynamic Center, and 100 continent women admitted to the hospital with other symptoms. In addition, face-to-face interviews were conducted to collect required data through a questionnaire on risk factors for urinary incontinence.

Results

The prevalence of mixed urinary incontinence was 62% and was more in old age for both groups. The majority of the case and control group were housewives living in the urban and had no systemic disease. Age, educational level, parity, gravity, type of delivery, menopause, gynaecological exam, diabetes mellitus and hypertension were associated with urinary incontinence among cases, variables that significantly varied in the chi-square study.

Conclusion

Three-quarters of women are affected by mixed urinary incontinence. Age, obstetric history, types of gynaecological exam, menopausal state and types of delivery recognize as risk factors associated with the occurrence of different types of urinary incontinence among both groups.

Keywords:*Urinary incontinence, Various types, Risk factors, Urodynamic Center.*

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INTRODUCTION

The International Continence Society describes urinary incontinence (UI) as "any involuntary leakage of urine" or "urine leakage"[1].

The three primary forms of UI are stress SUI: is "a complaint of involuntary loss of urine by effort or physical exercise (e.g. sports activities) or by sneezing or coughing", "Urgency UUI is the 'observance of involuntary urethra leakage synchronous with the feeling of sudden, compelling need for the emptiness that is difficult to defer; and Mixed MUI is the 'complaint of urgency related involuntary urine loss as well as effort or physical effort or sneezing or coughing [2].

The UI epidemiological studies indicate that the disorder is two to three times more common in a particular group of women, such as in pregnancy, with a value ranging from 18% to 42% [3].

Pregnancy is an independent UI risk factor that contributes to a weakened pelvic floor muscle due to pregnancy-related physiological changes, such as increased uterine pressure and increased fetal weight in the pelvic floor muscle (PFM) during pregnancy. Changes in levels of hormones like estrogen, progesterone, and relaxation, along with pregnancy-related levels, can lead to decreased PFM intensity and sphincter function. In addition, Bladder-neck and urethral hypermobility cause PFM weakness, leading to the incompetence of the urethral sphincter[4-7] .Epidemiological studies have shown that UI is associated with many risk factors, such as weight of neonates, parity, age, menopause, delivery mode, overweight, obesity, gravity, and specific medical comorbidities, especially diabetes [8-10].

There were less consistent associations with other causes, such as hysterectomy, prior gynaecological surgery, and hypertension [11]. Urinary incontinence is a social and medical problem that negatively affects the quality of life. Although it is not a life-threatening problem, discomfort caused by excessive wetness and frustration is a condition that causes people to feel inadequate and distressed and can lead to depression that can lead to psychological problems. Patients whose sexual, every day and work behaviours are affected limit their social and physical activations and decrease the intake of fluids [12]. Understanding the variation of a condition is essential not only for the study of risk factors but also for developing appropriate methods of defence and treatment. However, the studies are limited because the UI is hard to embrace, so it is not clear how many people encounter it. Therefore, the present study aimed to determine different types and investigate the factors that increase UI risk in Sulaimani City.

PATIENT AND METHODS

A descriptive (cross-sectional) quantitative study is carried out at the Surgical Teaching Hospital from ("November 2020 to December 2020". A non-probability (purposive) sampling method was used to choose the study sample from patients who visited Urodynamic Center, including 100 women with urinary incontinence (UI) for the study group and 100 other (control group) with other urological symptoms during the study period. The symptoms of UI, defined as any involuntary loss or leakage of urine, were diagnosed among all women admitted at Urodynamic Center. Exclusion criteria, patients not invited to the Urodynamic Center and women aged less than 18 years old.

Instruments and measurement: Women with UI were identified through the profiles of all women visiting the Urodynamic Center.

This study has used the direct interview technique with the patients. Required data were gathered through a semi-constructed questionnaire covering the UI-related risk factors. The questionnaire was conducted through face-to-face interviews. It consisted of five components: socio-demographic characteristics, medical problems, obstetrical characteristics, and risk factors. Through a pilot study consisting of 10 women, the questionnaire was administered. The questionnaire was revised and then modified and finalized. Before the study was conducted and the women were interviewed, informal consent was obtained from the women.

Data were analyzed using the SPSS statistical software package for personal computers. For this purpose, standard deviation, mean, and frequency were used. The association between potential risk factors and women with and without UI was checked through the Chi-square test. The relationship between other risk factors such as parity, mode of delivery and gynaecological conditions were estimated. A p-value of 0.05 was considered to be a statistically significant difference.

RESULTS

Table 1 demonstrates that the most of study sample cases (37%) were (50-59) years of age and (40%) were (30-39) years of age in a control group. Most of the cases and control group were housewives and lived in an urban area (80%, 61%, 46% and 77%), respectively. Regarding systemic disease for both cases and control group have not any systemic disease (75% and 84%), according to the gynaecological exam, majority of cases and control group have cystocele which constitutes (42% and 66%). The majority of cases (86%) had a vaginal delivery; on the other hand (60%) of the control group had a cesarean section. For the menopausal state of women, the majority of the cases had (70%), but (83%) of the control group had no menopausal state. Most of the cases (82%) did have not any gynaecological operation, and (67%) of the control group had a gynaecological operation. The same table shows, among cases and control group majority of them (88% and 55%) of women had a history of more than 2 Gravida, regarding para (83%) among cases had more than two and (50%) among control group are equal and less than two parties.

Table 2 shows that the highest percentage of urinary incontinence was found to have mixed incontinence (62%) followed by urge incontinence (23%) and stress incontinence (15%). In comparison, the highest percentage of the study sample was not damaging leakage. It was around (60%).

There was a highly significant association between UI with age group, type of gynaecological exam, menopause, parity and gravity than continence group ($p=0.001$) as shown in Table (3).

Table 1. Socio-demographic characteristics of the study and control group.

Variables		Case F (%)	Control F (%)
Age	20 - 29	5(5.0)	9(9.0)
	30 - 39	10(10.0)	40(40.0)
	40 - 49	24(24.0)	36(36.0)
	50 - 59	37(37.0)	12(12.0)
	60 - 69	17(17.0)	1(1.0)
	70 -79	7(7.0)	2(2.0)
Residential area	Rural	20(20.0)	6(6.0)
	Suburban	34(34.0)	17(17.0)
	Urban	46(46.0)	77(77.0)
Occupational	Housewife	80(80.0)	61(61.0)
	Employee	20(20.0)	39(39.0)
Systematic disease	Yes	25(25.0)	16(16.0)
	NO	75(75.0)	84(84.0)
Chronic disease	DM	8(8.0)	4(4.0)
	HTN	15(15.0)	10(10.0)
	DM&HTN	2(2.0)	12(12.0)
	NO	75(75.0)	74(74.0)
Type of gynaecological exam	Rectocele	25(25.0)	4(4.0)
	Cystocele	42(42.0)	66(66.0)
	NO	33(33.0)	30(30.0)
Type Delivery	C/S	6(6.0)	60(60.0)
	NVD	86(86.0)	37(37.0)
	None	8(8.0)	3(3.0)
Menopause	Yes	70(70.0)	17(17.0)
	No	30(30.0)	83(38.0)
Gynaecological operation	Yes	18(18.0)	67(67.0)
	NO	82(82.0)	33(33.0)
Gravida	NO	4(4.0)	1(1.0)
	≤2	8(8.0)	44(44.0)
	>2	88(88.0)	55(55.0)
Para	NO	8(8.0)	3(3.0)
	≤2	9(9.0)	50(50.0)
	>2	83(83.0)	47(47.0)
Total		100(100.0)	100(100.0)

Table 2. Distribution of the study sample according to types of urinary incontinence and leakage.

Variables		F (%)
Types of Urinary Incontinence	Stress	15(15.0)
	Urge	23(23.0)
	Mix	62(62.0)
Leakage	Yes	40(40.0)
	No	60(60.0)
Total		100(100.0)

Table 3. Association between socio-demographic data with case and control group.

Variables		Urinary incontinence		Total	P-value
		Case	Control		
Age	20 - 29	5(5.0)	9(9.0)	14(7.0)	0.001
	30 - 39	10(10.0)	40(40.0)	50(25.0)	
	40 - 49	24(24.0)	36(36.0)	60(30.0)	
	50 - 59	37(37.0)	12(12.0)	49(24.5)	
	60 - 69	17(17.0)	1(1.0)	18(9.0)	
	70 -79	7(7.0)	2(2.0)	9(4.5)	
Total		100(100.0)	100(100.0)	200(100.0)	
Gynaecological exam	Yes	67(67.0)	100(100.0)	167(83.5)	0.001
	No	33(33.0)	0(0.0)	33(16.5)	
Total		100(100.0)	100(100.0)	200(100.0)	
Menopause	Yes	70(70.0)	17(17.0)	87(43.5)	0.001
	No	30(30.0)	83(83.0)	113(56.5)	
Total		100(100.0)	100(100.0)	200(100.0)	
Gravidity	No	4(4.0)	1(1.0)	5(2.5)	0.001
	≤2	8(8.0)	44(44.0)	52(26.0)	
	>2	88(88.0)	55(55.0)	143(71.5)	
Total		100(100.0)	100(100.0)	200(100.0)	
Parity	No	8(8.0)	3(3.0)	11(5.5)	0.001
	≤2	9(9.0)	50(50.0)	59(29.5)	
	>2	83(83.0)	47(47.0)	130(65.0)	
Total		100(100.0)	100(100.0)	200(100.0)	
Types of Delivery	C/S	6(6.0)	60(60.0)	66(33.0)	0.001
	NVD	86(86.0)	37(37.0)	123(61.5)	
	Instrumental vaginal delivery	0(0.0)	1(1.0)	1(0.5)	
	None	8(8.0)	2(2.0)	10(5.0)	
Total		100(100.0)	100(100.0)	200(100.0)	

DISCUSSION

Pregnancy is related to the lower urinary tract symptoms, and the UI is also a rather alarming complaint. In this analysis, MUI (62 per cent) was the most frequent type of UI, followed by UUI (23 per cent) and subsequently SUI (15 per cent). This outcome was contrary to previous research done by (Priya et al., 2017 and Zhu et al., 2012) [13,14]. In accordance with these studies, it shows that SUI is the most frequent kind of UI. It was revealed that SUI is the most frequent type of UI. It was revealed that SUI is the most frequent type of UI. The women reported more stress incontinence compared with other types because this type of incontinence could not be controlled and probably affected their activities. Women with urge incontinence can modify their lifestyle, such as early urinating to reduce incontinence. Furthermore, childbirth may contribute to stress incontinence as two-third of the respondents experienced more than three childbirths.

A significant risk factor for developing UI was found to be age (Menezes et al., 2010) [10]. UI prevalence rises with age, and its aetiology is multifactorial. As a result of an increase in age, several changes happen in urinary tract physiology, mainly because of the age-related structural changes in the urinary tract and diseases outside the urinary tract (Beji et al., 2018) [15]. In the present study, 37% of women with UI aged over 50 years. The continent women were statistically younger than the incontinent ones. Ageing is not the reason for UI alone. However, a higher prevalence of UI in older age is closely related to the age-related changes in the urinary system. Estrogen decreasing with menopause can create incontinence by weakening pelvic muscles, causing vaginal atrophy, and decreasing the supporting tissues around the urethra in women. The other facilitating explanations for UI are reduced bladder capacity with increasing age, rise in residue urine quantity and involuntary bladder contractions.

In the detailed research carried out by (Irwin et al., 2006) [8], they found that the prevalence rate of UI was 25.1 per cent in women older than 18 years, and reported that the incidence of all lower urinary tract symptoms increased with age and SUI prevalence increased after 40 years. Furthermore, UI complaints were also recorded to have risen over 40, and MUI was the most common form (Yalcin et al., 2011) [16].

Hypertension has been found to be a risk factor for UI among women. Comparing incontinent and continent women in terms of their medical/gynaecological characteristics in the present study indicated that the number of people in the incontinent group who had a history of hypertension, diabetes mellitus, and gynaecological procedures was higher. Diseases such as hypertension and diabetes may develop urinary dysfunction. Their research (Santos et al., 2006) [17] found that hypertension disease-related risk factors for UI increased the risk of UI by 3.18 times and 17.7 times for diabetes mellitus. Furthermore, the study (Ozerdogan et al., 2015) [18] found that UI complaints were determined to increase in women with diabetes mellitus. On the other hand, the study (Zhu et al., 2006) [19] reported that hypertension was a risk factor.

There is a significant association between the UI and the gynaecological problem in this study. UI and pelvic organ prolapse (POP) are gynaecological problems commonly seen together; because a common reason causes all POPs and UI: pelvic floor insufficiency. In their study (Gozukara et al., 2015) [20], it was reported that the UI increased 3, 4 times in those with rectocele and 9,1 times in those with a cystocele. Decreased menopausal circulation of estrogen, age-related physiological changes in the lower urinary tract, and lack of estrogen receptors are related to increased UI prevalence (Unsal et al., 2013) [21]. Therefore, there is a significant association between the menopausal state and the UI in our study. Similar to that study (Gozukara et al., 2015) [20] reported that menopausal status increased UI by 2.7 times. On the other hand, contrary to our study (Ozerdogan et al., 2015 and Tseng et al., 2006) [18,22] have reported that incontinence is not related to menopausal status.

Pregnancy, peripartum, and childbirth have been considered the main contributor's factors for the increased occurrence of UI. These factors include (vaginal delivery, episiotomy, instrumental delivery and cesarean section (Danforth et al., 2009 and Yu et al., 2009) [23,24]. Regarding obstetric history, gravidity, parity, and type of delivery are very significant in the incontinence group compared to the continence group. The same result was found by (Beji et al., 2018) [15], which revealed that incontinent and control groups were statistically significant differences regarding delivery mode, parity and pregnancy number. The EPINCONT study was carried out on 15,307 women, and its results indicated that UI symptoms are associated with vaginal delivery more than cesarean section. It was also seen that the number of deliveries was associated with the combination of vaginal delivery and UI risk (Rortveit

et al., 2003 and Ham et al., 2009) [25, 26].

Conclusion: Urinary incontinence (UI) is a significant public health issue that can be resulted from many factors. In this study, three-quarters of women are affected by mixed urinary incontinence. In addition, age, obstetric history, types of gynaecological exam, menopausal state and types of delivery recognize as risk factors associated with the occurrence of different types of urinary incontinence among cases and control groups.

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