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ORIGINAL ARTICLE

Long-term Impact of Mode of Delivery on Urinary Stress Incontinence

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ABSTRACT

Background: Among the female population, incontinence of urine varies 23-45%. Significant symptoms of urinary incontinence found in about 7%, of which 50% are urinary stress incontinence (USI). It is an unintentional urinary leakage from the urethra, during physical activity such as coughing, sneezing, laughing or exercise.

Objective: To find the frequency of urinary stress incontinence (USI) and to find the long term impact of mode of delivery on urinary stress incontinence (USI).

Methodology:

Study Design: Cross sectional study

Settings: Department of Obstetrics & Gynecology, Janki Devi Jamiat Singh Hospital

Procedure for data Collection: 252 Patients with 48 to 58 years of age who answered questions related to urinary incontinence were included in the study. Data was entered and analyzed in SPSS. Age was presented as mean and ±SD. Mode of delivery, USI and Parity, etc… were presented as frequency and percentage. Chi square test was applied to compare the association between urinary stress incontinence with mode of delivery. p-value less than 0.05 was considered as significant.

Results: Total 252 patients included, the mean age was 53.45+13.24 years. Most of the females 133(52.8%) had 52-57 years of age group. Number of Women who had vaginal deliveries were 165(65.5%) and those who had Cesarean section were 87(34.5%).

The frequency of USI was reported as 'never' by 113(44.8%); 'occasionally very less often' by 63(25.0%); 'sometimes with sneezing, coughing but not always' by 47 (18.7%); and urine always leak with coughing and sneezing i-e severe USI by 29(11.5%). Severity increased with parity, and the frequency of USI was higher in women who had vaginal deliveries compared to cesarean deliveries. There was significant impact of mode of delivery on urinary stress incontinence. (P >0.05)

Conclusion: The conclusion of the study is that the prevalence of USI was lowest among nulliparous women and higher in multiparous women. Frequency of urinary stress incontinence was higher in women who had multiple vaginal deliveries compared to cesarean deliveries. Other Significant risk factors for severe USI were age, multiparity and high body mass index (BMI >30).

Keywords: Mode of Delivery, Parity, Urinary Stress Incontinence

INTRODUCTION

Urinary incontinence is a highly prevalent condition that affects people of all ages, and only a few studies in middle-aged population have been published. Many women hide these symptoms due to embarrassment & there is difficulty in access to medical services for the help. The prevalence of urine incontinence was found to be high among middle-aged women.

Among the female population, incontinence of urine varies 23-45% [1]. Urinary incontinence symptoms were found in 7% of people, with urinary stress incontinence accounting for 50% of the cases[2]. It is defined as an unintentional urinary leakage from the urethra, during the physical activity like coughing, sneezing, laughing or exercise[3].

Urinary stress incontinence (USI), the most prevalent form, is defined as involuntary loss of urine on physical exertion like walking, weight lifting or any other activity which causes a sudden rise in intra-abdominal pressure. Globally, the prevalence of urinary incontinence is about 49.0% for stress urinary incontinence, 22.0% for urge urinary incontinence &

29.0% mixed incontinence. Its pathophysiology involves increased bladder pressure which exceeds urethral closure pressure causing urethral sphincter opening and transient urine loss[4,5].

In Pakistan, according to Jamil A et al, prevalence rates of UI are 45% in pregnant women[6] and Ali HS et al found UI affects 10.6% of postpartum women[7]. One study showed frequency of SUI to be 44.4% amongst all women attending gynecology clinic at Agha Khan University[8].

There are a limited number of studies on urinary stress incontinence in women. The rationale of this study was to find the frequency of USI and to find the impact of mode of delivery on USI in middle age women.

MATERIAL AND METHODS

This was a cross-sectional study conducted in June 2021 to December 2021 in Janki Devi Jamiat Singh Hospital, Lahore. Sample size was calculated based on prevalence of USI being 40%. Thus, at least 252 participants were included with a 5% margin of error and 5% level of significance.

Patients with 48 to 58 years of age who answered questions related to stress urinary incontinence were included in the study. The excluded patients were those who had mental retardation, and neurological disorders, as well as those who had previously undergone surgery for urine incontinence. Demographic data regarding age, parity, BMI and comorbid ds like Diabetes or other chronic diseases was also noted. All females were asked about the frequency of urinary leakage and problems of hygiene and social issues associated with USI, parity i.e. no. of child births, mode of deliveries and obstetric intrapartum complications like instrumental delivery if any. A predesigned proforma was used to record data about above mentioned parameters.

Data was entered and analyzed in SPSS. Age was presented as mean +SD. Mode of delivery, USI severity i.e. mild/moderate/severe, Parity, BMI and Diabetes etc... were presented as frequency and percentage. Chi square test was applied to find the association of urinary stress incontinence with mode of delivery, age, diabetes, parity and BMI. P-value less than 0.05 was considered as significant.

RESULTS

Total 252 patients included, the mean age was 53.45+13.24 years. Most of the females 133(52.8%) were of 52-57 years of age group. Women who had vaginal deliveries were 165(65.5%) and who had Cesarean section were 87(34.5%). The frequency of USI was reported as 'never' by 113(44.8%); 'occasionally very less often' by 63(25.0%); 'sometimes with sneezing, coughing but not always' by

47 (18.7%); and urine always leak with coughing and sneezing i.e. Severe USI by 29(11.5%). Table:1.

Table 1: Descriptive of Age, Mode of Delivery & Urine Leakage

		Frequency (%)
Age	Mean+ SD	53.45+13.24
	<52	47(18.7%)
	52-57	133(52.8%)
	>58	72(28.6%)
Mode of Delivery	Vaginal Delivery	165(65.5%)
	Cesarean Section	87(34.5%)
Severity of USI	No symptoms	113(44.8%)
	Occasional , very less often	63(25%)
	Urine leak sometimes with sneezing /coughing but not always	47(18.7%)
	Urine always leak with coughing and sneezing	29(11.5%)
Diabetes	Yes	76(30.2%)
	No	176(69.8%)
BMI	<25	107(42.5%)
	25-30	77(30.6%)
	>30	68(27%)
Parity	0	12(4.8%)
	1	77(30.6%)
	2	88(34.9%))
	3+	75(29.8%)

The mean duration of diabetes was 12+ 3.45years. USI severity increased with parity, there was significant relationship between them (P < 0.05) Table: 2. Frequency of USI 165(65.47%) was higher in women who had vaginal deliveries compared to 87(34.52%) Caesarean deliveries. (P >0.05) Table: 3

Table 2: Comparison of Parity with USI

	Parity			
Severity of USI	0	1	2	3+
No symptoms	2(16.7 %)	45(58.4 %)	31(35. 2%)	35(46.7 %)
Occasional, very less often	5(41.7 %)	20(26%)	24(27. 3%)	14(18.7 %)
Urine leak sometimes with sneezing /coughing but not always	4(33.3 %)	4(5.2%)	26(29. 5%)	13(17.3 %)
Urine always leak with coughing and sneezing	1(8.3%)	8(10.4 %)	7(8%)	13(17.3 %)

P value < 0.005

Table 3: USI with Mode of Delivery

Severity of SUI	Vaginal Delivery	Caesarean section	p-value
No symptoms	67(40.6%)	46(52.9%)	0.03
Occasional , very less often	39(23.6%)	24(27.6%)	
Urine leak sometimes with sneezing /coughing but not always	34(20.6%)	13(14.9%)	
Urine always leak with coughing and sneezing	25(15.2%)	4(4.6%)	

Table 4: Comparison of severe USI with Females characteristics

	Severe SUI		p-value	CI
Age	47-52	3	0.00	1.17-1.63
	52-57	15		1.69-2.03
	>57	11		2.12-2.62
BMI	<25	8	0.05	1.74-2.12
	25-30	12		1.76-2.26
	>30	9		1.54-2.01
Parity	0	1	0.001	2.29-3.24
	1	8		1.39-1.80
	2	7		1.93-2.34
	3	13		1.48-1.96
Diabetes	Yes	6	0.33	1.451.89
	No	23		1.87-2.24
Mode of Delivery	Vaginal Delivery	25	0.03	1.87-2.21
	Cesarean Section	4		1.53-1.90

Association with Age, BMI, multiparity, Diabetes and Mode of delivery with Severe USI were shown as below. There was significant association with Age, increase in parity and vaginal delivery. Also women with BMI more than 30 had significant association with severe USI. (P<0.05)

DISCUSSION

Urinary incontinence is a severe public health issue that affects a large number of women. It markedly impairs quality of life & leads to physical, social or psychological difficulties even though is not life threatening[9,10]. It is a common, stressful condition in women, with prevalence estimates varying across studies[11]. UI is known to have an effect on the quality of women's daily life[12,13]. Women may suffer from depression and may be ashamed or embarrassed to address their problems with healthcare practitioners. They may be unclear of the available therapies[14]. Several Surgical treatment options are available for those who want to have treatment of USI.

Pregnancy & delivery seems to be main risk factors among young and middle-aged females. However, both during and after pregnancy, the reported prevalence of urine incontinence varies greatly[15]. USI was observed in 11.5% of women in this study, which is similar with other research[16,17]. The frequency of USI in women was reported to increase with age[7]. In our study, it was found that there was significant relationship between USI & age group (P = 0.00). This is in accordance with another study which showed that the frequency of UI increases with age and there was significant association between UI and age group[18].

In one study, the following frequencies of USI were reported: 'never' 32%, 'occasionally' 28%, 'sometimes' 26%, 'often' 10% and 'all the time' 5%. In comparison with our study, no symptoms were observed in 44.8%, occasionally was 25%, urine leakage sometimes was 18.7% and always was 11.5%. One study shown that the prevalence of severe USI was not associated with mode of delivery (14% for women delivered by caesarean only vs 16% for vaginal births). In our study, the USI was associated with Mode of delivery i.e. frequency of USI was higher in women who had vaginal deliveries compared to cesarean deliveries i.e.15.2% in women who had vaginal birth and 4.6% in women with caesarean deliveries The other Significant risk factors for severe USI were high body mass index, diabetes mellitus and multiparity in other studies[19]. In comparison, only multiparity and High BMI (more than 30) was significantly associated with USI in our study.

This knowledge about Urinary stress incontinence would be helpful to pick the high risk cases among the female population so that they could be offered treatment accordingly which could improve their quality of life.

The study had one limitation: it was based on questionnaires, and there were no clinical examination of women with USI.

CONCLUSION

The conclusion of the study is that the frequency of USI was lowest among nulliparous women and higher in multiparous women. Frequency of USI is much higher in women who had multiple vaginal deliveries compared to Caesarean deliveries. Other Significant risk factors for severe USI were age, multiparity and high body mass index (BMI >30).

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