

A Prospective Cohort Study Depicting Stress Urinary Incontinence in Women of Reproductive Age Group – Reason Yet To Be Defined!

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Abstract

Background

Urogenital problems are more common in the female population. Among them urinary incontinence is a common problem. It has significant impact on the physical, psychological and socio-economic aspects of life. Although urological problems are more common in older women, it can affect at any age group, aim of this study was to determine prevalence of urinary continence in reproductive aged women and also to assess the severity of stress urinary incontinence (SUI).

Results: Results were evaluated using SPSS computer software system. P Value < 0.05 is considered to be statistically significant. Prevalence of urinary incontinence in our study was found to be 34.1%. Urinary incontinence increases with BMI of patient which is found to be statistically significant in our study. (p Value < 0.05). Urinary incontinence prevalence is found to be high in women who delivered vaginally which is statistically significant (p value <= 0.05)

Conclusion: Urinary incontinence is a very distressing problem. With the help of simple questionnaire, burden of disease can be estimated. Knowing about prevalence and risk factors of urinary incontinence is very important, so that necessary steps in its prevention and treatment can be taken.

Keywords: Urinary incontinence, Quality of life, King's Health questionnaire, Body mass index, vaginal delivery, Quality of life.

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I. Introduction

Urogenital problems are more common in the female population. Among them, urinary incontinence is a common and distressing problem. It has significant impact on the physical and psychological aspects of life. Urinary incontinence (UI) is defined by the International Continence Society as the involuntary loss of urine that is a social or hygienic problem to the individual. Stress urinary incontinence (SUI), the complaint of involuntary loss of urine on effort or physical exertion or sneezing or coughing, is the most common type of urinary incontinence (UI) in pregnant women. It is known to have detrimental effects on quality of life (QoL)^{1,2} in approximately 54.3% of all pregnant women in four domains: physical activity, travel, social relationships, and emotional health. Pregnant women with UI have statistically significant lower QoL during pregnancy than those without UI^{3,4,5}.

Pregnancy and delivery-related factors are considered to be the main risk factors for SUI development during pregnancy. Pregnancy has significant effect on lower urinary tract function. In uncomplicated pregnancy, micturition frequency is influenced by the physiologic state of the bladder. Frequency has been described as diurnal changes, which may be up to seven times or more of normal, and slight nocturnal changes of one or more times during the night. The incidence is the same in both primigravidae and multigravidae women. The first trimester is the most common time of onset. The uterine weight is the most important factor affecting frequency throughout the pregnancy. Uterine weight not only exerts pressure on the bladder but also irritates the bladder. Normal bladder capacity in the first trimester is 410 ml. In late pregnancy, descent of the presenting part of fetus has an additional effect on bladder irritation. Bladder capacity in the third trimester reduces to 272 ml in conjunction with increased irritability of detrusor muscles. Alternative causes include nervous and hormonal influences. Indeed, the onset of frequency in late pregnancy is a common symptom of engagement of the fetal head.

PFM weakness causes bladder-neck and urethral mobility, leading to urethral sphincter incompetence. When the pregnant woman coughs, sneezes, laughs, or moves, intra-abdominal pressure increases, and this pressure is transmitted to the bladder. When pressure inside the bladder is greater than urethral closure pressure, incorporated with weakness of the urethral sphincter, SUI is the result. Pregnancy is one of the main risk factors for the development of SUI in young women^{6,7,8}. As pregnant women with SUI have lower urethral pressure

than continent pregnant women , lower relaxin concentrations in late pregnancy, therefore, correlate with a higher prevalence of SUI at the second and third trimesters.

Objective of study

- 1 To determine prevalence of urinary continence in reproductive aged women.
- 2 To assess the severity of stress urinary incontinence (SUI), using a self-reported health-related quality-of-life questionnaire, and to assess the effect of pregnancy and childbirth on bothersome lower urinary tract symptoms (LUTS).

II. Methodology

To investigate the impact of a pregnancy and delivery on pelvic floor function, between August 2016 and August 2017 candidates were recruited from patients presenting to gynaec OPD with complaints suggestive of urinary incontinence. An informed written consent was obtained from each patient before this study was conducted. Following data such as socio-demographic factors, urinary symptoms and obstetric history, height and weight measurements were recorded. Among those with UI, degree of incontinence is assessed by calculating severity index. A severity index was calculated by multiplying the reported frequency and the amount of leakage. There are four levels in reported frequency: 1. Less than once a month; 2. One or several times a month; 3. One or several times a week; 4. every day and/or night; There are two levels in amount of leakage: 1. Drops or little; 2. More. The resulting index value was further categorized into slight (1-2), moderate (3-4), and severe (6-8). To assess the QoL affection by UI, King’s Health Questionnaire (KHQ) was used. Exclusion criteria were previous urogynaecological surgery, urogynaecological malformations, diabetes mellitus and neurological disorders.

III. Results

Results were evaluated using SPSS computer software system.

P Value<0.05 is considered to statistically significant.

Prevalence of urinary in- continence in our study was found to be 34.1%.

Figure 1.

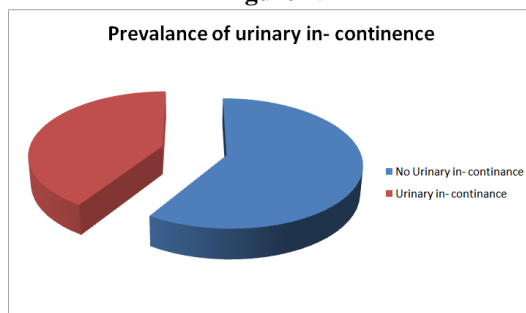


Table 1. Prevalence of Urinary in – continence in relation to parity

Parity	Urinary incontinence (n=69)	No ur. Incontinence (n=129)
Nullipara	1	10
1	7	22
2 to 3	53	86
>=4	8	11

Figure 2.

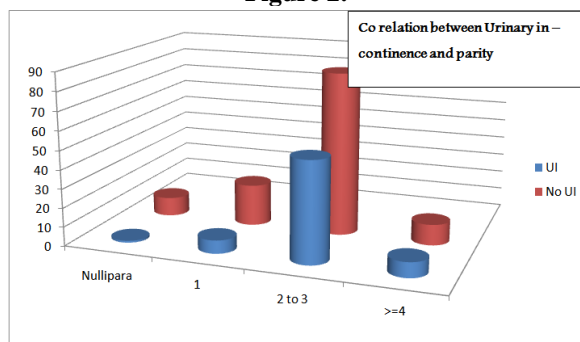


Table 2.Urinary in- continence in relation to age at first child birth

Age at 1 st child birth (yrs)	Urinary in- continence (n=68)	No ur. In- continence (n=119)
<20	20	28
20- 29	47	89
>=30	1	02

Figure 3.

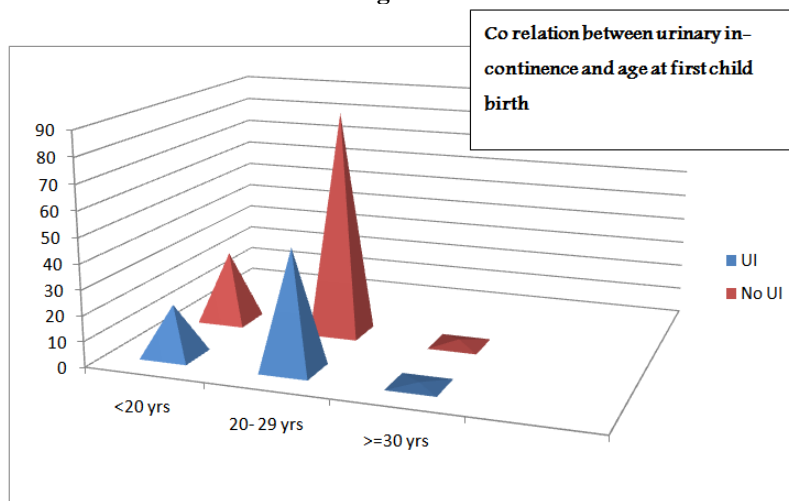


Table3. Prevalence of urinary in- continence with regards to inter delivery interval

Interdelivery interval (yrs)	Urinary in- continence (n=61)	No Ur. In- continence (n=97)
<=2	15	17
2- 4	46	78
>=4	0	02

Figure 4.

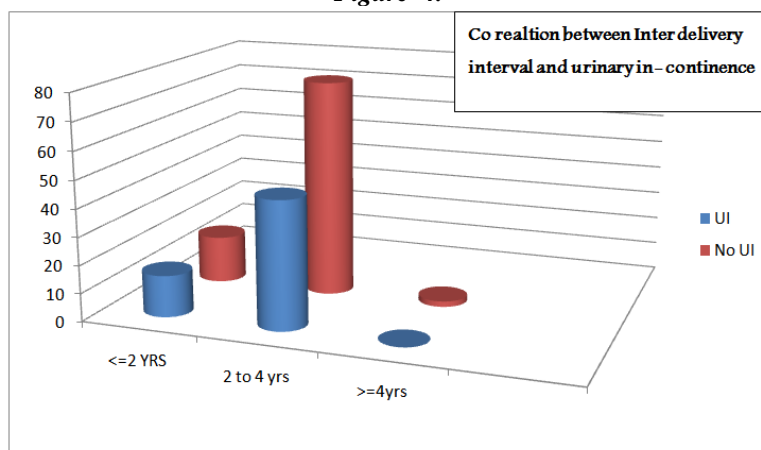


Table 4.Prevalence of urinary in- continence with regards to Body mass index.

Body mass index (kg/m ²)	Urinary in- continence (n=69)	No ur. In- continence (n=129)
<18.5	3	8
18.5- 24.9	36	80
25- 29.9	24	38
>=30	6	3

Figure 5.Urinary incontinence increases with BMI of patient which is found to be statistically significant in our study. (p Value <0.05)

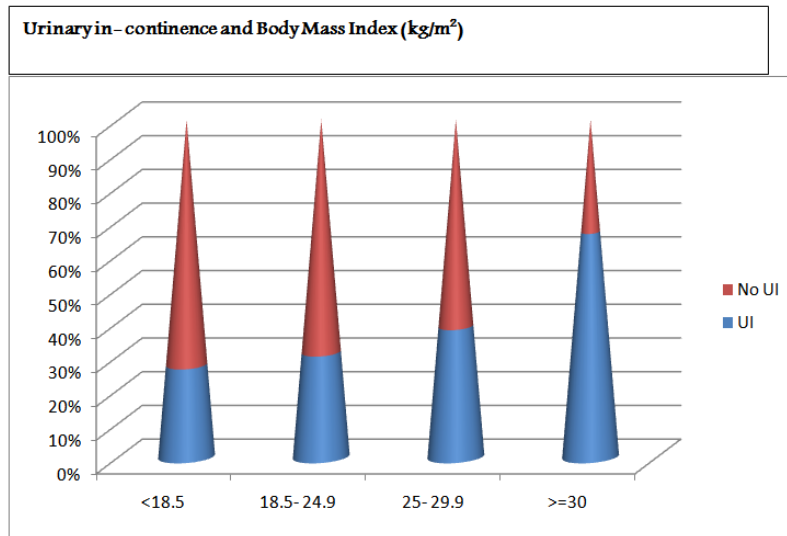


Table5. Prevalence of urinary in- continence with regards to mode of delivery

Mode of delivery	Urinary in- continence (n= 68)	No ur. In- continence (n= 119)
Vaginal delivery	51	86
Caesarean section (LSCS)	17	33

Figure 6.Urinary incontinence prevalence is found to be high in women who delivered vaginally which is statistically significant(p value<= 0.05).

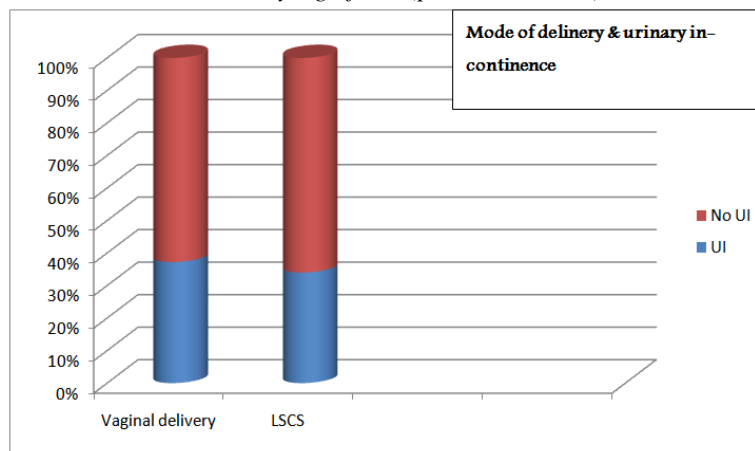


Figure 7.

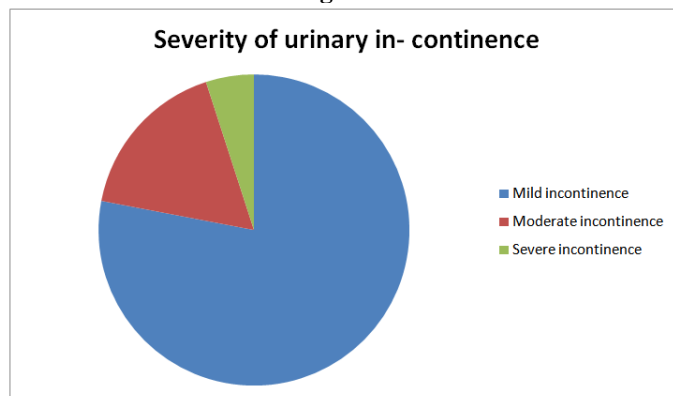
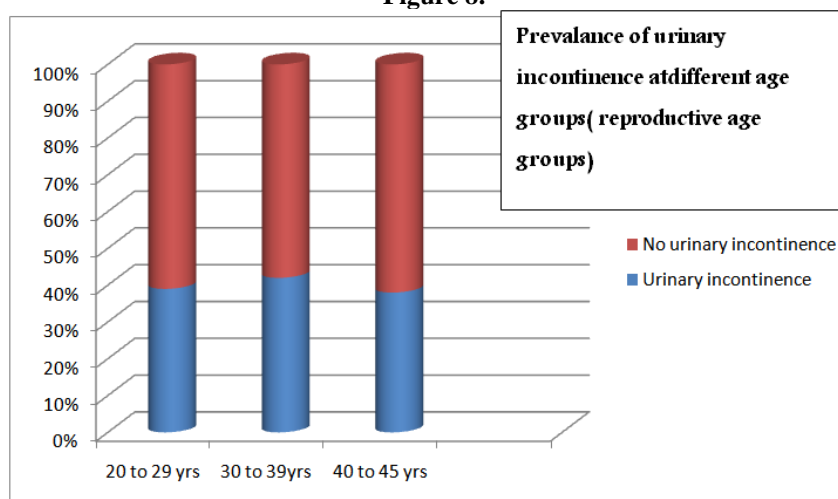


Figure 8.



IV. Discussion

The prevalence of UI was 34.1% in our study. Other studies also show higher prevalence of UI in adult population 20 to 55%^{8,9}. Because of the higher prevalence of UI, it is essential to evaluate its cause and to take possible preventive measures to reduce the incidence of UI.

The prevalence of UI increases with age. A study done among US women, showed that UI of moderate to severe degree affects 7% of women in the age of 20 to 39, 17% in 40 to 59 yr of age, 23% in 60 to 79 yr of age, and 32% in 80 yr of age^{10,11}. The reason is after menopause with decrease in hormonal levels, there is progressive decrease in muscle tone and decreased contractility of the urethral sphincter leading to UI¹².

Similar to our study results several other study results show increased prevalence of incontinence in obese women. A study compared relationship of BMI and incidence of UI in middle aged women.¹⁵ Compared to women with normal BMI, women of BMI ≥ 35 kg/m² had higher prevalence of all types of UI. With increase in BMI, the associated increase in intra-abdominal pressure and intra-vesical pressure may be the cause for pelvic floor dysfunction¹³.

Pregnancy and child birth are regarded as key environmental determinants of urinary incontinence, and more than 60% of incontinent women associate its onset with pregnancy, child birth, or postpartum^{7,8}. However, the impact of birth mode on incontinence and possible protective role of caesarean section have remained the subject of intense debate. In our study urinary incontinence prevalence is found to be high in women who delivered vaginally which is statistically significant (p value ≤ 0.05). A study compared the prevalence of UI between women who delivered vaginally and by caesarean section. 20 UI was 67% higher after a vaginal delivery (40.3%) compared to women who had undergone caesarean section (28.8%)⁸.

The King's health questionnaire is considered a complete questionnaire that assesses both the impact of incontinence in different aspects of quality of life⁶. The International Continence Society classifies the questionnaire as highly recommendable to use in clinical research, mainly due to its popularity and for the fact of being already translated into and validated in other languages.

V. Conclusion

Urinary incontinence is a very distressing problem. With the help of simple questionnaire, burden of disease can be estimated. Knowing about prevalence and risk factors of urinary incontinence is very important, so that necessary steps in its prevention and treatment can be taken. Urinary incontinence had higher impact on emotional and social well-being. Awareness has to be created about available treatment options among women.

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