

Original Research Article

Study of Female Urinary Incontinence for Evaluation of Prevalence, Types and Risk Factors Among Patients Attending Gynaecology Outpatient Department

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ABSTRACT

Background: Urinary incontinence is one of the most prevalent condition among women. The risk factors need to be evaluated further for better diagnosis and management. **Objective:** To know prevalence, obstetric and gynaecological risk factors of various type urinary incontinence

Methods: This observational correlation study was conducted among all women with age 18years and above with symptoms of urinary incontinence attending Gynecology outpatient Department in Vani Vilas Hospital, Bowring & Lady Curzon Hospital Bangalore, attached to BMC & RI during the period of November 2010 to October 2012. **Results:** The prevalence of prolapsed was most common in 5th decade. Urinary incontinence was most common in 3rd para(38%). The prevalence of urinary incontinence was high in low socio economic class women. Urinary incontinence was most common seen in obese women with BMI 25-29.9 (48%). Urinary incontinence was seen most common in post menopausal women (64.5%). Most of the patients with urinary incontinence had vaginal deliveries (87.5%). 36% of patients with urinary incontinence were having associated psychosocial symptoms. 14% of patients with urinary incontinence had underwent hysterectomy. 21% of the patients with urinary incontinence were diabetics. Most common type of incontinence was stress incontinence (61.5%). Normal Qmax (>16ml) was seen in 63.5% of patients with urinary incontinence

Conclusions: There is no correlation between symptoms and presence of urinary tract disturbances. Uroflowmetry and post void residual urine or single test that can be used when there is suspicion of LUT dysfunction but neither can make a definite diagnosis. Uroflow rate is one of the simplest urodynamic test available.

Keywords: Female Urinary Incontinence, Prevalence, Risk Factors,

Introduction

Urinary incontinence is more prevalent in woman than men making gender itself a risk factor¹. Incontinence shows increasing prevalence during young adult life of 20-30%, a broad peak around middle age of 30-40% and then a steady increase in elderly women of 30-50%.

The studied risk factors for female urinary incontinence includes age, parity, route of delivery, obesity, menopause, smoking, chronic cough, constipation and prior pelvic surgeries.

The women with urinary incontinence often alter their lives by curtailing activities, social outings and intimacy. They also suffer marked deterioration of self esteem. Incontinence has larger social and economic impact than many chronic conditions and diseases.

Primary risk factors for incontinence may differ over a women's life time, thus it is important to explore risk factors for incontinence².

Urinary incontinence is often a progressive condition associated with significant morbidity and embarrassment and it imposes a significant burden on affected individuals, those who care for affected individuals and health services. In order to develop effective strategies for the prevention and management of urinary incontinence, it is important to be able to estimate its prevalence with some degree of accuracy.

Various risk factors for urinary incontinence have been studied extensively but conclusive data still need to be proved.

Of various types of incontinence the most prevalent ones SUI, requires surgical treatment where as urge incontinence is treated by medical and pharmacological methods. For these reasons the study of these patients require tests that can clarify the diagnosis we make in our office³

Materials and Methods: All women with age 18years and above with symptoms of urinary incontinence attending Gynecology outpatient Department in Vani Vilas Hospital, Bowring & Lady Curzon Hospital Bangalore, attached to BMC & RI during the period of November 2010 to October 2012.

Inclusion criteria:

1. All women aged 18 years and above with symptoms of urinary incontinence.

Exclusion criteria:

1. Women with pregnancy.
2. Women with UTI.
3. Women with incontinence due to fistula
4. Women with retention overflow dribbling.

Sample Size:

All the eligible women attending gynaecology outpatient department will be included (Minimum of 200 Cases)

Study Design: An observational correlation study.

Methodology:

In all cases a detailed history was taken, with particular reference given to following points.

- 1) Name, age, religion, socioeconomic status and residence
- 2) History regarding duration of marriage, parity, obstetric index, age at first delivery, place of delivery, conducted by whom? (trained or untrained) , duration of deliveries, whether difficult and prolonged or of normal duration.
- 3) Detailed history regarding urinary incontinence with the following questionnaire.
- 4) Other complaints like backache, bowel symptoms, white discharge per vaginum, psychosocial problems and sexual difficulties were elicited for.
- 5) Past history of asthma, tuberculosis, constipation, diabetes, hypertension, use of hormonal therapy were asked for. Also the history of similar complaints in the past, history of any surgery especially hysterectomy and other pelvic surgeries. Route of hysterectomy whether abdominal, vaginal or laparoscopic was elicited.

Examination:

The general physical examination of these patients including built, nourishment, height and weight of the patient and BMI, evidence of anaemia, blood pressure recorded. A thorough systemic examination was done.

In CNS examination, mental status of the patients, sacral reflexes, perineal sensation and spine was examined.

In per abdomen examination, presence of striae, scars, hernial orifices, divarication of recti and evidence of free fluid in abdomen was checked for.

The local examination was done with full bladder with patient in dorsal lithotomy position.

Tests eliciting urinary incontinence were carried out.

In all cases following investigations were carried out:

- 1) Haematological investigations- haemoglobin, total and differential counts, ESR.
- 2) Urine analysis-protein, sugar, microscopy, casts.
- 3) Fasting and post prandial blood glucose
- 4) Renal parameters: blood urea, serum creatinine
- 5) Abdominopelvic sonography was done to find out presence of hydroureter, hydronephrosis
- 6) Uroflow studies, post void residual urine(PVR).

Uroflow studies:

All patients who fulfilled the inclusion criteria for the study were subjected to uroflowmetry.

Here, patient was asked to micturate into an electronic commode connected to a transducer. A time versus flow chart is obtained. This curve was used to determine voiding difficulties.

Residual urine measurement:

After v uroflowmetry patients were subjected to post void residual urine (PVR) measurement by abdominal bladder scan. Bladder volume is estimated by using the formula

$$\text{VOLUME (ml)} = (\text{H} \times \text{W} \times \text{D} \times 0.7)(21\%)$$

0.7- correction factor because the shape of the bladder is not circular until full

H-height is the greatest supero-inferior diameter.

D-depth is the greatest anteroposterior diameters(both in saggital diameter)

W-width is the greatest transverse diameter.

Results: In our study of 200 cases of urinary incontinence, The prevalence of prolapsed was most common in 5th decade (37%). In 4th and 6th decades prevalence was 30% and 22% respectively.

The prevalence of urinary incontinence was high in low socio economic class women. Most commonly seen in women belonging to upper lower class (42.5%) and lower middle class (26.5%)

In the present study Urinary incontinence was most common seen in obese women with BMI 25-29.9 (48%)

Urinary incontinence was seen most common in post menopausal women (64.5%)

Table 1: relation of BMI with urinary incontinence

BMI	FREQUENCY	PERCENTAGE
<18	4	2
18-24.9	72	36
25-29.9	96	48
30-34.9	23	11.5
>35	5	2.5

Mean ± SD: 26.28±3.87

In the present study, Urinary incontinence was most common in 3rd para (38%) with incidence in 2nd and 4th para being 24% and 29% respectively. Urinary incontinence in nulliparous women being 1.5%

Table 2: Parity relation to urinary incontinence

Parity	Frequency	Percentage
0	3	1.5
1	10	5
2	48	24
3	76	38
4	58	29
5	5	2.5

In the present study 87.5% have underwent vaginal delivery and 12.5% have underwent cesarean delivery.

Most of the patients with urinary incontinence had vaginal deliveries (87.5%) with 59.5% patients having history of prolonged labour. The history of forceps delivery could not be elicited as many were home deliveries and patients were less educated. In the present study of all caesarean deliveries 72% were for emergency indications.

In the C/S group, 13 (11.21%) patients in the emergency C/S group and 5 (2.06%) patients in the elective C/S group reported postpartum urinary incontinence. Among those who reported postpartum urinary incontinence, 26 patients experienced labor (8.8% in the labor group), including 13 patients who had vaginal delivery and 13 patients who had emergent C/S.

36% of patients with urinary incontinence were having associated psychosocial symptoms

14% of patients with urinary incontinence had underwent hysterectomy. Among the patients having underwent hysterectomy vaginal route (53.5%) surgery was common that abdominal route (39.4%).

21% of the patients with urinary incontinence were diabetics.

TABLE 3: ASSOCIATION OF ROUTE OF HYSTERECTOMY WITH URINARY INCONTINENCE

ROUTE OF HYSTERECTOMY	FREQUENCY	PERCENTAGE
ABDOMINAL	11	39.4
VAGINAL	15	53.5
LAPAROSCOPIC	2	7.1

Most common type of incontinence was stress incontinence (61.5%) followed by urge incontinence (24%) and mixed type (14.5%). Women with urinary incontinence also had increased frequency of nocturia and incomplete voiding.

TABLE 4: TYPES OF INCONTINENCE

INCONTINENCE	FREQUENCY	PERCENTAGE
SUI	123	61.5
URGE	48	24
MIXED	29	14.5

Normal average flow rate of >10 ml were seen in 64.5% of patients. Among the cases with normal average flow rate 62% had stress incontinence, had urge incontinence(22.4%) and had mixed incontinence (15.5%).

TABLE 5: UROFLOWMETRY AND BLADDER DYSFUNCTION

AVERAGE FLOW RATE	STRESS INCONTINENCE	URGE INCONTINENCE	MIXED INCONTINENCE
<10ml	43	19	9
10-15ml	59	20	12
15-30ml	19	9	7
>30ml	2	-	1

The majority of the patients with bladder dysfunction had AVF of 10-15 ml/sec Mean \pm SD: 12.05 \pm 5.24

Stress incontinence	62%
Urge incontinence	22.4%
Mixed incontinence	15.5%

Normal Qmax (>16ml) was seen in 63.5% of patients with urinary incontinence. Among the patients with normal Qmax 60.6% had stress incontinence, 24.4% had urge incontinence and 14.96% had mixed type of incontinence.

TABLE 6: MAX FLOW RATE QMAX

QMAX	STRESS INCONTINENCE	URGE INCONTINENCE	MIXED INCONTINENCE
<15ml	46	17	10
15-30ml	67	26	19
>30ml	10	5	-

The majority of patients, with bladder complaints had QMAX OF 16-30ml/sec. Age is not associated with Qmax levels with P=0.321. Higher BMI is significantly associated with lower QMax with P=0.097+

Stress incontinence	60.6%
Urge incontinence	24.4%
Mixed incontinence	14.96%

Discussion:

In the study hunskaar et al, they found that prevalence of urinary incontinence increases with a typical rate in young adult of 20-30%, a peak around middle age of 30-40%, and a steady increase in old age with prevalence of 40-50%.⁴ In Anders study, they found prevalence of incontinence among 20-29yrs women to be 9.65 whereas between 50-59 yrs it was found to be of 32.4% prevalence.⁵ In the Norwegian epicont⁴ study, they found that the rate of incontinence peaked at approximately 60% in women with 40-49yrs of age, urge incontinence began to rise in women between 50-59yrs of age and peaked at roughly 20% women between 80-89yrs of age. Nygaard et al study found the proportion of women reporting urinary incontinence increased incrementally with age, ranging from 9.7% in 20-39 years of age to 49.7% at 80 years or older. Cerruto et al⁶, in his study mentions that lower socioeconomic status is linked to poorer health outcomes and the findings from literature review would support this hypothesis when it comes to prevalence of the condition. In his study Kubik (2004) explains that consideration of socioeconomic status may improve the effectiveness of urinary incontinence education programs.⁷

In the study Dwyer et al⁸, it was concluded that Obesity (>20% more than average weight for height and age) was significantly more common in women with genuine stress incontinence and detrusor instability than in the normal population. In those with detrusor instability the body mass index was found to increase with age and parity. In women with genuine stress incontinence the body mass index increased with age and the number of previous incontinence operations.

In the study Lopez et al⁹, they found that More than 45% of participants were either overweight (25 kg/m² <or= BMI <or= 29.9 kg/m²) or obese (BMI >or= 30 kg/m²). The adjusted analysis revealed that women with a BMI >or= 30 kg/m² had 1.96 (p = 0.06) times the probability of having UI compared to women with a BMI < 25 kg/m².

Foldspang et al⁵ found that urinary incontinence period prevalence was 17%. Seventy eight percent were parous, and 24% had had three or more childbirths. In women aged 30-44 years, the prevalence of urinary incontinence was found to be associated with parity and, in women aged 45 years and more, with three or more childbirths. In parous women 30-44 years of age, the prevalence of urinary incontinence increased with age at least childbirth and, in women aged 45 years and over, it increased with increasing parity but decreased with increasing age at first childbirth.

In the study Rorteviet et al, The prevalence of any incontinence was 10.1 percent in the nulliparous group; age-standardized prevalences were 15.9 percent in the cesarean-section group and 21.0 percent in the vaginal-delivery group¹⁰.

The study Baydock et al, stated that incontinence was increased in patients who had a forceps delivery (21%) compared with no forceps delivery (9%), an episiotomy (32.4%) compared with no episiotomy (18.7%) and a longer second stage of labour¹¹. The prevalence of any urinary incontinence was increased with forceps delivery (15.5%) compared with no forceps delivery (8.7%).

Hung-yen chin in his study found that Among the 539 deliveries over the 3-year study period(2000–2002), 18 (5.01%) patients in the C/S group and 13 (7.22%) patients in spontaneous vaginal delivery group reported postpartum urinary incontinence¹².

Altman et al in his study selected 165 260 women who had undergone hysterectomy (exposed cohort) and a control group of 479 506 individuals who had not had this procedure (unexposed cohort). During the 30-year observational period, the rate of stress-urinary-incontinence surgery per 100,000 person-years was 179 in the exposed cohort versus 76 in the unexposed cohort¹³.

In the study phelan et al, Weekly incontinence (27%) was reported more often than other diabetes-associated complications. He concluded that Among overweight and obese women with type 2 diabetes, urinary incontinence is highly prevalent and far exceeds the prevalence of other diabetes complications. In the present study 21% patients were diabetics¹⁴.

The incidence varied in several studies with stress incontinence being most common type in all the studies.

Table 7: Prevalence of Types of incontinence:

Author	Stress incontinence	Urge incontinence	Mixed incontinence
Baydock et al ¹¹	23%	12%	29%
Norwegian epicont ⁶	14.8%	8.6%	7.1%
Lopez et al ⁹	46.8%	41.5%	11.7%
Campbell ¹	49%	21%	29%
Present study	66.5%	24%	14.5%

Conclusion:

Although symptoms usually cause patients to seek treatment in some patients there is no correlation between symptoms and presence of urinary tract disturbances. Uroflowmetry and post void residual urine or single test that can be used when there is suspicion of LUT dysfunction but neither can

make a definite diagnosis. Uroflow rate is one of the simplest urodynamic test available, Seeing as a general diagnostic test for normal or abnormal voiding, A preliminary evaluation can be performed by gynaecologists using equipments readily available in OPD and minor OT.

The goal of the diagnostic evaluation is the accurate characterisation of LUT symptoms for the purpose of treatment. Ideally, a brief low cost non invasive method would provide a high degree of diagnostic accuracy. However, existing technology is limited in this regard. Until future refinements permit a completely non invasive cost effective accurate analysis of female LUT symptoms existing technology must be appropriately utilised.

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