ORIGINAL ARTICLE

# Frequency of Overactive Urinary Bladder in Females and Assessment of Gynaecological and Obstetrical Risk Factors for its Worsening

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*ABSTRACT*

*Objective* — *To estimate frequency of overactive urinary bladder in females and to assess gynaecological and obstetrical risk factors worsening the overactive bladder compromising quality of life.*

*Study design* — *Cross- sectional survey.*

*Place & Duration of study* — *Liaquat National Hospital & Medical College Karachi, from August to November 2009.*

*Methodology* — *Females visiting different outpatient departments for medical and non-medical reasons were interviewed after informed verbal consent. They filled-up pre-designed questionnaire V-8 validated by ICS for primary screening of overactive bladder (OAB) in population. Any related obstetrical and gynaecological condition were also recorded.*

*Results* — *Five hundred and ten women were interviewed. The estimated frequency of OAB was 23.28% (n=144). Age related changes were significant as high scores of OAB found in multiparous women and with advancing age. It was also related to history of vaginal prolapse, sexual activity and obesity. Overactive bladder adversely affected quality of life, but very few women sought treatment for it.*

*Conclusion* — *A quarter of women interviewed reported OAB which affected their daily routines but no treatment was taken.*

*Key words* — *Overactive urinary bladder, Quality of life, Women.*

**INTRODUCTION:**

Overactive bladder is defined by the International Continence Society as urinary urgency that is frequently accompanied by urinary frequency and nocturia, with or without urge urinary incontinence.[1] The urge incontinence is common symptom and extremely debilitating in severe condition. Despite of considerable impact on the quality of life majority of patients never seek medical help. This may be due to embarrassment or mistaken belief that nothing can be done for this problem.[2] Few old patients take this symptom as a part of aging process. Many patients change their life style confining themselves at home or only visit places where toilet is in vicinity.[2] Prevalence of OAB ranges from 6 to 35 % in Europe and up to 16.5 % in the United States.[3,4] Some authors reported that only 27 % of OAB patients received medication to relieve their symptoms.[5]

In majority of cases the underlying cause of overactive bladder is unknown. In some patients neurological deficit and detrusor hyper reflex are reported.[6] Prevalence of overactive bladder is reported in women with advancing age, body mass index >30, menopause, pelvic organ descent and hormone replacement therapy.[7,8] The mixed incontinence is common. Treatment of stress component by surgery as well as pelvic floor training most often has a beneficial effect on urge incontinence. The objective of this research was to find out the frequency of overactive bladder in general female population with

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particular emphasis to find out gynaecological and obstetrical risk factors which may worsen symptoms of overactive bladder.

**METHODOLOGY:**

A survey was conducted on females at Liaquat National Hospital & Medical College Karachi, from August to November 2009 after approval from Research and Ethics Committee of the hospital. The data was collected from outpatient areas of hospital involving other disciplines such as medical and surgical OPDs. The interviews was conducted by trained medical officer who filled-up, pre-designed questionnaire V-8 (validated by ICS for primary screening of overactive bladder in population) after taking informed verbal consent. The bio data was also recorded in which certain obstetrical and gynaecological risk factors were assessed. The gynaecological risk factors included vaginal discharge, prolapse, mass in abdomen, previous pelvic organ surgeries. Obstetric conditions were marital status, parity, vaginal births both spontaneous and instrumental, caesarean sections, size of neonates born, hospital delivery or delivery conducted by trained or untrained birth attendants at small clinics or houses. General variables noted were age, body mass index and history of smoking. Pregnant women and those within 3 months postpartum as well as subjects having history of renal disease, urinary tract infections, medical disorders like diabetes, hypertension, etc were excluded.

The OAB-V8 is a self-administered tool directed towards detecting patients suffering from OAB.[6] The OAB-V8 questionnaire, contains original 8 items from the OAB symptom and bother scale with modified instructions. The OAB-V8 asks how bothered one is by the four hallmark symptoms of OAB: urinary frequency, urgency, nocturia, and urge incontinence. Items are measured on a 6-point Likert scale (0 not at all to 5 a very great deal), plus a dichotomous question about the patient's gender (male 2 additional points). The questionnaire contains a cell to collect the total score, which is obtained by simply adding up the individual item scores. The total score ranges from 0 to 42 points, with a score above 8 points reflecting that the patient may have OAB. Aggregate score 8 was taken as normal category, 9 - 20 mild, 21- 30 moderate, 31- 40 and onwards as severe degree of symptoms.

Data was entered into SPSS –version 20. Descriptive statistics were used to summarize the categorical and continues variables and Chi-square independent test was used to compare the proportion differences. P-value <=0.05 was considered significant.

**RESULTS:**

Out of total of 520 women interviewed 144 (23.28%) had overactive bladder. The questionnaire was filled by both of the incontinent and continent women. Urge urinary incontinence was troublesome in multiparous women with advancing age. The mean age associated with urinary symptoms was 35.4±12.4 year (table I). Similarly sexually active and widowed women had higher scores than unmarried girls. After vaginal hysterectomy and anterior and posterior vaginal wall repair, vesico- vaginal fistula repair surgery, abdominal hysterectomies the OAB score was significantly high (p <0.000).

**Table I: Distribution of OAB Bladder Score (n=510)**

| Bladder score | Number | (%) |
|---|---|---|
| 0-8 (Normal) | 366 | 71.8 |
| 9-20 (Mild) | 96 | 18.8 |
| 21-30 (Moderate) | 34 | 6.7 |
| >30 (Severe) | 14 | 2.7 |

Significantly (p<0.00) high scores of OAB noticed related to marital status, mass in abdomen like fibroid uterus and ovarian tumours, descent of pelvic organs, vaginal discharge, history of smoking. Similarly obstetrical risk factors were evaluated and found to cause significant impact on quality of life of women due to pelvic floor dysfunction (table II).

**DISCUSSION:**

In this cross-sectional study frequency of OAB symptoms was 23.28% which is comparable with 16.8%-49% in some studies however, frequency of urge incontinence differed.[4,9] In women prevalence of urge incontinence increase with increasing body mass index, whereas in men OAB symptoms increase with age.[10]

Anatomically women have small urethra and close approximation of anal and birth canal. They are more prone to develop lower urinary tract symptoms as compared to men. In this study strong association was found with obstetrical risk factors suggesting the pelvic floor dysfunction after the multiple births and occurrence of lower urinary tract symptoms. Association of urinary symptoms with advancing age was also noted. This may have relation with past obstetrical conditions that worsen with age.[10]

In Asian population overall prevalence is reported

**Table II: Association of Symptoms of Overactive Bladder With Gynaecological and Obstetrical Risk Factors**

| Weight of Baby | Bladder score | | | | p-value |
|---|---|---|---|---|---|
| | Normal | Mild | Moderate | Severe | |
| Normal | 229 (68) | 73(21.7) | 25 (7.4) | 10 (3.0) | 0.616 |
| Small | 14 (73.7) | 2 (10.5) | 2 (10.5) | 1 (5.3) | |
| Large | 13 (68.4) | 2 (10.5) | 3 (15.8) | 1 (5.3) | |
| **Live born** | | | | | |
| Nullipara | 110 (81.5) | 19 (14.1) | 4 (3.0) | 2 (1.5) | 0.009 |
| Primipara | 55 (80.9) | 8 (11.8) | 4 (3.0) | 1 (1.5) | |
| 2-4 (Multipara) | 142 (68.6) | 45 (21.7) | 13 (6.3) | 7 (3.4) | |
| >5 (Grand multipara) | 59 (59.0) | 24 (24.0) | 13 (13.0) | 4 (4.0) | |
| **Mode of Deliveries** | | | | | |
| No delivery | 112 (81.8) | 19 (13.9) | 4 (2.9) | 2 (1.5) | 0.091 |
| SVD | 182 (66.2) | 61 (22.2) | 22 (8.0) | 10 (3.6) | |
| Instrumental | 18 (69.2) | 6 (23.1) | 1 (3.8) | 1 (3.8) | |
| LSCS | 54 (75.0) | 10 (13.9) | 7 (9.7) | 1 (1.4) | |
| **Marital status** | | | | | |
| Unmarried | 81 (87.1) | 11 (11.8) | 1 (1.1) | 0 (0.0) | 0.000 |
| Married | 277 (69.9) | 79 (19.9) | 28 (7.1) | 12 (3.0) | |
| Widowed | 8 (40.0) | 6 (30.0) | 5 (25.0) | 1 (5.0) | |
| Separated | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (100) | |
| **Mass in Abdomen** | | | | | |
| Yes | 28 (54.9) | 14 (27.5) | 9 (17.6) | 0 (0.0) | 0.001 |
| No | 338 (73.6) | 82 (17.9) | 25 (5.4) | 14 (3.1) | |
| **Prolapse** | | | | | |
| Yes | 25 (40.3) | 23 (37.1) | 11 (17.7) | 3 (4.8) | 0.000 |
| No | 341 (76.1) | 73 (16.3) | 23 (5.1) | 11 (2.5) | |
| **Vaginal Discharge** | | | | | |
| Yes | 29 (42.0) | 25 (36.2) | 12 (17.4) | 3 (4.3) | 0.000 |
| No | 337 (76.4) | 71 (16.1) | 22 (5.0) | 11 (2.5) | |
| **After pelvic surgery** | | | | | |
| Yes | 6 (35.3) | 4 (23.5) | 5 (29.4) | 2 (11.8) | 0.000 |
| No | 360 (73.0) | 92 (18.7) | 29 (5.9) | 12 (2.4) | |
| **History of Smoking** | | | | | |
| Yes | 10 (43.5) | 7 (30.4) | 5 (21.7) | 1 (4.3) | 0.005 |
| No | 356 (73.1) | 89 (18.3) | 29 (6.0) | 13 (2.7) | |

as 53.1%. In that study authors used clinical symptoms to diagnose OAB specifically urge incontinence. They surveyed 5000 women from 11 Asian countries by means of questionnaire. Only 5% women sought treatment for their condition. They reported 36% urinary urgency, 28% frequency

and 11% urge incontinence.[11]

The pelvic organ prolapse affects more than 50% of female population to some degree though it is under reported. The high risk population include those women who gave birth to large babies (>3.5-4.5 kg). We found prolapsed floor in women who gave birth to average size babies so this factor proved itself as risk for pelvic floor dysfunction, but urinary symptoms were negligible as reported by others.[7] Pelvic organ prolapse was found significantly associated with overactive bladder symptoms as compared to the women with well supported pelvic floor.

In a study it was observed that 38- 75% women attending gynaecology clinics with pelvic organ prolapse associated with symptoms of lower urinary tract, including stress urinary incontinence, urgency, frequency and urge incontinence. This leads to low quality of life.[12] In present study women with pelvic organ prolapse had significant symptoms of overactive bladder requiring treatment before performing any kind of prolapse surgery. We noticed significant protective effect on pelvic floor in women who had no sexual activity.

Women who presented with vaginal discharge also had detrusor irritability. This may be due to persistent or recurrent vaginal infection leading to involvement of urinary tract as well. In this study we found strong association with the raised intra-abdominal pressure due to compression by space occupying lesion like any mass in abdomen such as fibroid uterus, ovarian masses, causing detrusor over activity. In a study bothersome symptoms found were pressure in lower abdomen (74%), urinary frequency (64%), inability to hold urine with cough, sneeze or other activity (59%). Loss of urine related to urgency (48%) and strong sense of urgency to have bowel movement (41%) were also reported.[13]

The metabolic factors like high BMI >30kg/$m^2$ was significantly associated with urge incontinence. These findings coincide with the reported literature.[14] The ambulatory urodynamic recording has not previously been used to document how often detrusor activity causes leakage during stress test but now this modality is in use.[15] The life style of women has impact on bladder activity. A cross sectional study showed that current and former smoking was associated with urgency.[7]

**CONCLUSION:**

The overactive bladder was frequently reported in women with predominating symptoms of urge incontinence which affected quality of life.

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