

De Novo Urinary Symptoms after Pelvic Organ Prolapse Repair Surgery: A Cross Sectional Study at AKU Hospital

SHAHLA ILYAS¹, SYEDA NAJMUSAHAR², DURIYA REHMANI³, SAHIRA AGHA⁴, NAZIA MUSHTAQ⁵

¹Registrar Obs & Gynae, Medicare Hospital, Karachi

²FCPS Obs & Gynae, Consultant, Chiniot General Hospital, Karachi

³Assistant Professor Obs & Gynae, Creek General Hospital, Karachi

⁴FCPS Obs & Gynae, Faculty Consultant/ Senior Registrar Medicare Cardiac and General Hospital, Karachi

⁵Consultant Gynaecologist PNS Shifa Hospital/ Assistant Professor Behria Medical and Dental College, Karachi

Correspondence to: Dr. Shahla Ilyas, Email: shahlailyas331@gmail.com

ABSTRACT

Objective: To determine the frequency of new onset urinary symptoms after surgery for pelvic organ prolapse repair.

Study Design: Descriptive Cross-Sectional Study.

Place and Duration: This study was conducted at Outpatient Gynecological Clinics, Aga Khan University Hospital (AKUH) Karachi, Pakistan from January 19, 2018 to July 18, 2018.

Materials and Methods: Eighty one women were included in the study. Informed consent was taken after explaining the procedure, risks and benefits of the study. Women who underwent POP repair surgery in the past 6 weeks were recruited. They were asked to complete the proforma including personal information and details of all urinary symptoms like frequency, urgency and incontinence etc. provided by residents after informed consent through validated questionnaire UDI SF6. All the collected data were entered into the proforma attached at the end and used electronically for research purpose.

Results: Mean \pm SD of age was 52.75 \pm 9.71 years. Out of 81 patients, 47 (58%) women were menopause. In frequency of new onset of urinary symptoms De novo urinary incontinence was noted in 12 (14.8%) women, 20 (24.6%) had De novo urges urinary incontinence, while 15 (18.5%), 28 (34.5%) and 20 (24.6%) women had De novo stress urinary incontinence, De novo urinary frequency and De novo urinary urgency respectively.

Conclusion: It is to be concluded that De novo urinary frequency was found to be the most common new onset urinary symptoms followed by De novo urinary Urgency and De novo Urge Urinary Incontinence.

Keywords: De novo urinary symptoms, Pelvic Organ Prolapse (POP), Post- Operative Stress Urinary Incontinence (SUI), Quality of Life (QoL), Urinary Incontinence (UI)

INTRODUCTION

Pelvic organ prolapse (POP) when defined by symptoms has a prevalence of 3-6% and up to 50% when based on vaginal examination (1). In a population based cross sectional study by Jokhio, Rizvi et al the prevalence of POP in rural Pakistan is 12.1% (2). A substantial portion of women with POP are managed surgically with subjective cure rate of 92.1% (3) A population based study reported lifetime cumulative risk of 12.6% for POP surgery. Estimated increase in in POP surgery in a US population based study is 16000 in 2010 to 245970 in 2050 (4).

The different types of de novo urinary symptoms that may develop include urgency, frequency, SUI, and UUI. In a systematic review of RCT and quasi RCT by Maher et al. de novo OAB was 12%, de novo voiding dysfunction was 9% and that SUI being 20.4% was most frequent (5). De novo SUI was 8% after anterior colporrhaphy (26/324) and 13% after transvaginal polypropylene mesh (41/320) (6). A clinical and urodynamic follow-up study on the risk of developing urinary stress-incontinence after vaginal repair in continent.

The women presenting with POP requiring surgery is common in our clinics. Women who undergo surgery for POP may develop urinary symptoms for the first time. There is insufficient local literature which defines the relationship of development of de novo urinary symptoms after POP surgery. The rationale of my study is to determine the frequency of the women who develop de novo urinary symptoms after POP surgery. It will also help

in counselling the patient pre and post operatively providing them an option to opt for stress incontinence surgery preoperatively or understanding the situation if urinary symptoms develop postoperatively (7).

MATERIALS AND METHODS

This descriptive/cross-sectional study was conducted at Outpatient Gynecological Clinics, Aga Khan University Hospital (AKUH) Karachi, Pakistan from January 19, 2018 to July 18, 2018. Total 81 women who underwent POP repair surgery in the past 6 weeks at Aga Khan Hospital were recruited in this study. Patients' detailed demographics were recorded after taking informed written consent. Patients with history of previous urinary urges incontinence (UUI), stress urinary incontinence (SUI), frequency and urgency, patients with history of connective tissue disease, previous use of anti-muscarinics or alpha blockers, active UTI, pregnant women and patients not gave consent were excluded.

All the patients were asked to complete the performa including personal information and details of all urinary symptoms like frequency, urgency and incontinence etc. provided by residents after informed consent through validated questionnaire UDI SF6. All information regarding variables was recoded in predesigned performa by the researcher herself. Data analysis was done on SPSS version 19. For categorical variables like marital status, menopause, urgency, VUI and SUI and grade of prolapse proportions were calculated. For continuous variables like

age, parity, height, weight, BMI, urinary frequency mean and standard deviations were calculated. De Novo urinary symptoms were stratified with respect to age, post stratification chi square test was applied. P value was taken ≤ 0.05 as significant.

RESULTS

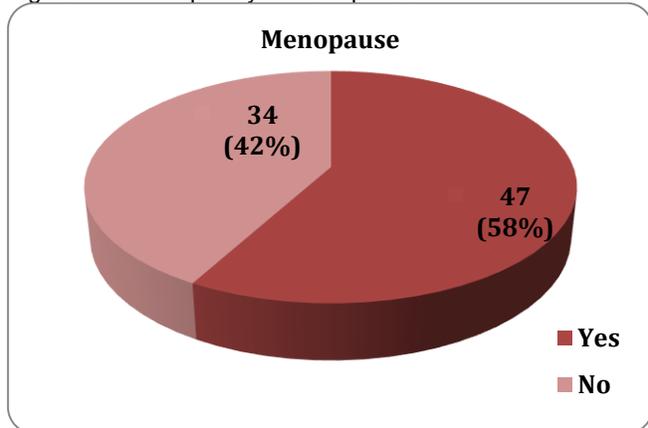
In this study 81 married women of pelvic organ prolapse repair cases were included to assess the new onset urinary symptoms and the results were analyzed as Mean \pm SD of age was 52.75 ± 9.71 years. Mean \pm SD of weight was 62.45 ± 14.75 kg. Mean \pm SD of height was 151.65 ± 6.23 cm. Mean \pm SD of body mass index was 28.59 ± 6.51 kg/m². Mean \pm SD of duration of symptoms of urinary incontinence was 9.65 ± 4.84 weeks. Mean \pm SD of parity was 2.30 ± 1.2 . (Table 1)

Table No 1: Baseline Details of All the Patients

| Variable | Frequency No. | %age |
|---------------------------|-------------------|------|
| Mean age (Years) | 52.75 ± 9.71 | - |
| Mean Weight (Kg) | 62.45 ± 14.75 | - |
| Mean Height (cm) | 151.65 ± 6.23 | - |
| Mean BMI (kg/m) | 28.59 ± 6.51 | - |
| Symptoms Duration (weeks) | 9.65 ± 4.84 | - |
| Mean Parity | 2.30 ± 1.2 | - |

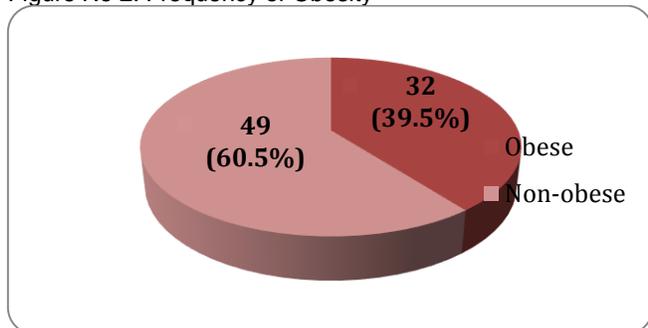
Out of 81 patients, 47 (58%) women were menopause as shown in figure 1.

Figure No 1: Frequency of menopause



In distribution of obesity, 32 (39.5%) were obese while 49 (60.5%) were non-obese as shown in Figure 2.

Figure No 2: Frequency of Obesity



Prolapse grade were classified as grade I for 14 (17.2%) women, grade II for 25 (30.9%) while 25 (30.9%) and 17 (21%) women were categorized in grade III and IV as shown in table 2.

Table 2: Frequency for Grades of Prolapse (n=81)

| Grades of prolapse | Frequency | Percentage |
|--------------------|-----------|------------|
| Grade I | 14 | 17.2% |
| Grade II | 25 | 30.9% |
| Grade III | 25 | 30.9% |
| Grade IV | 17 | 21% |

In frequency of new onset of urinary symptoms De novo urinary incontinence was noted in 12 (14.8%) women, 20 (24.6%) had De novo urges urinary incontinence, while 15 (18.5%), 28 (34.5%) and 20 (24.6%) women had De novo stress urinary incontinence, De novo urinary frequency and De novo urinary urgency respectively.

Table 3. Frequency of New Onset Urinary Symptoms

| New onset urinary symptoms | Frequency | Percentage |
|-------------------------------------|-----------|------------|
| De novo Urinary Incontinence | 12 | 14.80% |
| De novo Urge Urinary Incontinence | 20 | 24.60% |
| De novo Stress Urinary Incontinence | 15 | 18.50% |
| De novo urinary Frequency | 28 | 34.50% |
| De novo urinary Urgency | 20 | 24.60% |

De Novo urinary symptoms were stratified with respect to age and found no significant difference with p-value > 0.05 . (Table 4)

Table No 5: Stratification of Age Group with New Onset Urinary Symptoms

| New onset urinary symptoms | Age Group [In Years] | | P-Value |
|-------------------------------------|----------------------|------------|---------|
| | 34 - 50 | >50 | |
| De novo Urinary Incontinence | 2 (2.1%) | 10 (10.5%) | 0.540 |
| De novo Urge Urinary Incontinence | 7 (7.4%) | 13 (13.7%) | |
| De novo Stress Urinary Incontinence | 6 (6.3%) | 9 (9.5%) | |
| De novo urinary Frequency | 7 (7.4%) | 21 (22.1%) | |
| De novo urinary Urgency | 4 (4.2%) | 16 (16.8%) | |

DISCUSSION

Pregnancy and delivery are known to cause significant physiological changes in all organ systems (8). Although pelvic floor disorders (urinary incontinence, fecal incontinence and pelvic organ prolapse) have been associated with pregnancy and delivery, the effects of pregnancy and delivery on pelvic organ support have not been fully elucidated (9). Studies have reported that the number of births (parity), mode of delivery and birth weight of the baby is important risk factors for pelvic floor insufficiencies (10, 11). It has been determined that these risk factors related to pregnancy and delivery lead to urinary incontinence, fecal incontinence and pelvic organ prolapse which are pelvic floor insufficiencies (12).

This study presents the validation of the Spanish version of the urogenital symptoms and quality of life questionnaires in women with urinary incontinence, UDI-6, to be used in clinical practice and in research during pregnancy. The simplicity of both questionnaires makes

them easily understandable for the pregnant women to whom they are addressed. There are a significant number of specific questionnaires for female urinary incontinence (13), but as far as we know, none have been validated in pregnant women. The UDI-6 questionnaires are simple instruments that show adequate feasibility, reliability and validity when used in pregnant women.

Having questionnaires that measure the quality of life is fundamental for the clinical diagnosis and to evaluate the effectiveness of the treatments. Together, the UDI-6, allow detecting urinary incontinence, assessing its severity according to the discomfort it causes and measure its impact on quality of life. It is usual that urogenital symptoms do not appear isolated (14), and the possibility of UDI-6 fragmenting into three subscales makes it easier to identify which symptoms bother the pregnant woman, which together with the assessment of quality of life through UDI-6 is very useful to establish the treatment and evaluate its effectiveness during pregnancy and postpartum.

In a study by Ingrid Nygaard et al (15) in US, women with symptomatic pelvic floor disorders, 49.7% were of age 80 years or older and 36.8% were between 60 to 79 years (82,83). In a study by Jundt et al (16) the mean age of patients was 62.8 years.

Whereas in a study by Reena et al (17) women of 50 years or older were found to have twice the risk of women younger than 50 years to develop POP (17), the study reported a mean age 51.24 years. Brubaker et al observed that the mean age was 62±10 years (18). But in our study the mean age of women with POP was found to be 52.75±9.71 years. Although different studies mentioned about different mean age groups for developing POP, in general it is observed higher the age group, higher is the incidence of POP. A study of Ganj FA, et al [19] noted age as 63.5±10.2 years.

Our study also noted the mean weight as 62.45±14.75 kg, mean height as 151.65±6.23 cm and mean body mass index as 28.59±6.51 kg/m². Ganj FA, et al [19] reported body mass index as 28.1±5.1 kg/m², Fitzgerald MP, et al [20] noted to have a BMI of 27.9±5.6 kg/m² and Diez-Itza I, et al [21] noted BMI as 26.0±3.6 kg/m².

The mean duration of symptoms of urinary incontinence was 9.65±4.84 weeks and mean parity was 2.30±1.2. Reena C, et al [17] noted parity as 3.3. Another study noted to have a parity of 3.10±1.6 [19]. Diez-Itza I, et al [21] further documented parity as 3.0.

In present study, out of 81 patients, 47 (58%) women were menopause. The prevalence of menopause women was 117 (92.1%) [19]. There were 32 (39.5%) obese women while 49 (60.5%) were non-obese. Ganj FA, et al [19] noted obese women as 36 (28.3%).

The distribution of prolapse grade was as grade I for 14 (17.2%) women, grade II for 25 (30.9%) while 25 (30.9%) and 17 (21%) women were categorized in grade III and IV. Another study reported that of the 78 women, 68 (87.2%) had grade III prolapse whereas only 3 (3.8%) had grade II and 7 (9%) had grade IV prolapse [17]. The study of Ganj FA, et al [19] reported prolapse grades as grade I for 01 (0.8%) patients, grade II for 12 (9.4%), 85 (66.9%) had grade III and 26 (20.5%) were in grade IV. The study of

Fitzgerald MP, et al [20] noted to have 91 (62%) women in prolapse grade III and 55 (38%) in prolapse grade IV.

New onset of urinary symptoms as De novo urinary incontinence was noted in 12 (14.8%) women, De novo urges urinary incontinence in 20 (24.6%), De novo stress urinary incontinence in 15 (18.5%), De novo urinary frequency in 28 (34.5%) women while 20 (24.6%) had De novo urinary urgency. In the study of Reena (17), 34 (64.2%) patients had demonstrable urinary incontinence postoperatively.

In this study, effect modifier with respect to new onset of urinary symptoms, insignificant difference was reported in age group (P=0.540). It may be worthwhile to check for urinary incontinence after reducing the prolapse with a pessary, especially in continent women. Women with occult incontinence who undergo pelvic reconstructive surgery may need a systematic clinical evaluation as well as urodynamic studies to characterize the incontinence—a protocol that would allow for better preoperative counseling.

CONCLUSION

It is to be concluded that De novo urinary frequency was found to be the most common new onset urinary symptoms followed by De novo urinary Urgency and De novo Urge Urinary Incontinence. It is important to test all women with POP after surgery for pelvic organ prolapse repair and need long term follow up. These urinary symptoms effect over quality of life of women. This warrants greater attention for gynecological health needs in our country by safe family planning practice.

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