Burden and Clinical Outcomes of Female Pelvic floor and Lower Genital Tract Disorders

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ABSTRACT

Objective To determine the frequency, demographic and clinical profile, as well as clinical outcomes of urogynecological morbidities among women presenting to a tertiary care hospital in Karachi.

Study design Retrospective cross-sectional study.

Place & Duration of study Department of Obstetrics and Gynaecology, Ward-08, Jinnah Postgraduate Medical Centre, (JPMC) Karachi, from January 2022 to December 2024.

Methods Data were extracted from the records of outpatient department, ward admissions and operation theaters. Women presenting with pelvic organ prolapse (POP), urinary incontinence, lower urinary tract symptoms, fistula, and perineal problems were included. Continuous variables were summarized as median (IQR) except age, which was reported as mean ± SD. Chi-square and Fisher's Exact tests were applied to find out the association between urogynecological conditions and clinical outcomes.

Results A total of 193 women were included. The mean age of the women was 43.9±13.6 years; median parity was 5 (IQR 3–6), median inter-pregnancy interval was 8-months (IQR 6–12), and median duration of symptoms was 18-months (IQR 16–32). POP was the most common morbidity (n=138 - 71.5%), followed by overactive bladder (n=23 - 11.9%) and stress urinary incontinence (n=15 - 7.8%). POP demonstrated significant associations with abnormal BMI (p=0.017), short inter-pregnancy interval (p=0.001), and chronic constipation (p=0.025). Fistulas were significantly associated with abnormal BMI (p=0.017) and instrumental delivery (p=0.041). A total of 148 (76.7%) women underwent surgical management. A total of 186 (96.4%) women reported improvement.

Conclusion Urogynecological morbidities were common and often presented at an advanced stage. Modifiable risk factors contribute significantly to disease burden, while appropriate management yielded high improvement rates.

Key words Urogynaecological morbidities, Pelvic organ prolapse, Vesicovaginal fistula, Overactive bladder, Stress urinary incontinence.

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INTRODUCTION:

Urogynecological morbidities comprise of a variety of pelvic floor disorders that significantly affect the health and quality of life of women worldwide. These include pelvic organ prolapse, urinary incontinence (UI), fecal incontinence, overactive bladder (OAB), voiding dysfunction, and complex fistulas such as vesicovaginal fistula (VVF) and rectovaginal fistula (RVF).[1] These conditions are common and often debilitating. Still, they remain under-reported, under-diagnosed and under-treated specially in low- and middle-income countries (LMICs) like Pakistan.[2,3]

Worldwide pelvic floor disorders affect approximately 25% of adult women. The prevalence is increased in women with advanced maternal age or those with multiple vaginal deliveries.[4,5] The burden is especially high in South Asian countries where multiple risk factors like heavy physical labor, early marriages, high fertility rates, lack of access to obstetric care are prevalent.[6,7] Urogynecological disorders cause impairment of physical functions due to symptoms like pelvic pressure, urinary leakage and discomfort. It also results in significant psychosocial consequences like depression, isolation and loss of sexual desire.[8,9] Women continue to suffer in silence because of these urogynaecological problems. There is an associated stigma attached to it.[10]

The data on urogynecological morbidity in Pakistan is limited and often reported as small hospital-based studies.[11,12] However, to address this burden specialized urogynecology clinics are established in public-sector hospitals in Karachi. As there is limited information available about the systematic evaluation of disease patterns, demographic profiles, treatment modalities available, and clinical outcomes a retrospective analysis of hospital records was conducted to document the related information.

METHODS:

Study design, place & duration: This was a retrospective cross-sectional study conducted in the Department of Obstetrics & Gynecology ward-08, Jinnah Postgraduate Medical Centre Karachi, from January 2022 to December 2024.

Ethical considerations: Institutional Review Board of Jinnah Postgraduate Medical Centre granted approval through letter No. F.2-81/2025-GENL/362-A/JPMC.

Sample size estimation: As this was a secondary analysis of the hospital records, data of all the women fulfilling the inclusion criteria were retrieved.

Inclusion and exclusion criteria: All patients reporting to the Department of Obstetrics & Gynecology ward 8 with urogynecological problems (pelvic organ prolapse, lower urinary tract symptoms, urinary incontinence, vesicovaginal/ rectovaginal fistula, perineal trauma/problems) with complete demographic and clinical record were included.

Study protocol: A structured data extraction form was used to gather information from manually maintained medical record in ward registers, operation theatre, and out-patient department. Demographic and clinical variables included age, menopausal status, parity, inter-pregnancy interval (short if less than two years), BMI, comorbid conditions, occupation, history of heavy weight lifting, history of chronic cough, chronic constipation, abdominal mass or distension, family history of pelvic organ prolapse, obstetric history like history of prolong labor, instrumental delivery and trauma during delivery.

Statistical analysis: Data were entered and analyzed using SPSS version 30.0. Categorical variables were represented as frequencies and percentages while continuous variables as mean and standard deviation or median with IQR where applicable. Chi-square and Fisher's Exact tests were applied to find out the association between urogynecological conditions and clinical outcomes.

RESULTS:

The records of 193 patients with urogynecological problems were found. The mean age was 43.9±13.6 years. Parity showed a mildly skewed distribution, with a median parity of 5 (IQR: 3–6). Inter-pregnancy interval was positively skewed, with a median interval of 8 months (IQR: 6–12). Duration of symptoms demonstrated marked skewness, ranging from 3 to 216 months, with a median of 18-months (IQR: 16–32). Of the total, 92 (47.7%) were premenopausal, 44 (22.8) perimenopausal and 57 (29.5%) postmenopausal. Majority of the women (n=188 - 97.4%) were parous and 5 (2.6%) were nulliparous. Most of the women (n=154 - 79.8%) had all vaginal deliveries, 13 (6.7%) had all cesarean deliveries, 21 (10.9%) had both vaginal and cesarean deliveries. Out of the total, 153 (79.3%) women had a short inter-pregnancy interval and 40 (20.7%) had good inter-pregnancy interval. A total of 55 (28.5%) women had history of instrumental deliveries. Ten women were underweight, 28 (14.5%) had normal BMI, 128 (66.3%) overweight and 27 (14%) were obese.

A total of 138 (71.5%) had pelvic organ prolapse. Other conditions are given in table I. Two (1%) patients had structural vulval disorders namely fusion of labia minora and clitoromegaly. In women with pelvic organ prolapse 19 were in POP-Q stage 1, 39 in stage 2, 56 in stage 3 and 24 in stage 4. A significant association with BMI was found in women with pelvic organ prolapse (p= 0.017), inter-pregnancy interval (p=0.001), and chronic constipation (p=0.025). Significant association was noted between stress urinary incontinence with inter-pregnancy interval (p=0.017). Significant association was also found between fistula with BMI (p=0.017)

Table I: Primary Diagnosis of Women Reporting with Urogynecological Problems

Primary Diagnosis	Frequency	Percentage
Pelvic organ prolapse	138	71.5%
Stress urinary incontinence	15	7.8%
Overactive bladder	23	11.9%
Bladder pain syndrome	03	1.6%
Vesicovaginal fistula	07	3.6%
Rectovaginal fistula	05	2.6%
Cosmetic perineal problem	02	1%
Total	193	100%

Table II: Association of Urogynecological Problems with Different Conditions

	Pelvic Organ Prolapse			Overactive Bladder			Stress Urinary Incontinence			Fistula		
Factors	Yes	No	p-value	Yes	No	p-value	Yes	No	p-value	Yes	No	p-value
BMI (underweight-normal)	21	17	.013	06	32	.411	02	36	.519	05	33	.062
(overweight – obese)	117	38		17	138		13	142		07	148	
Inter-pregnancy interval												
Short (<24 months)	118	35	<.001	17	136	.499	08	145	.010	08	145	.276
Good (> 24 months)	20	20		06	34		07	33		04	36	
History of instrumental deliveries - yes	38	17	.639	04	51	.326	06	49	.304	07	48	.041
No	100	38		19	119		09	129		05	133	
Diabetes – Yes	49	12	.065	05	56	.279	04	57	.668	03	58	.756
No	89	43		18	114		11	121		09	123	
Hypertension – Yes	22	10	.706	05	27	.478	03	29	.711	02	30	1.00
No	116	45		18	143		12	149		10	151	
Chronic weight lifting – Yes	62	19	.187	06	75	.100	07	74	.701	06	75	.560
No	76	36		17	95		08	104		06	106	
Chronic constipation – Yes	68	17	0.020	06	79	0.065	06	79	0.743	05	80	1.000
No	70	38		17	91		09	99		07	101	

and instrumental deliveries (p=0.041). Details are given in table II.

In majority of patients (76.7%) surgical intervention was done. Vaginal hysterectomy was the most common procedure performed in 80 (41.5%) cases, followed by sacropexy in 20 (10.4%) cases, mid-urethral sling procedures in 15 (7.8%) cases, sacrospinous fixation in 15 (7.8%) cases, and fistula repair performed in 12 (6.2%) cases. Perineal surgeries for structural vulval disorders were performed in 2 (1%) women. These include labioplasty and clitoroplasty. The surgeries were done in collaboration with the plastic surgeons. Pessary treatment was used in 19 (9.8%) women, whereas 26 (13.5%) cases received medical therapy alone for overactive bladder and bladder pain syndrome.

Out of the total, 186 (96.4%) patients improved and recovered completely, 6 (3.1%) were partially improved and recurrence was noted in one (0.5%). Recurrence was occurred where sacropexy was performed for stage 1 pelvic organ prolapse one year after surgery. Out of the six patients who reported partial improvement, five had overactive bladder and were advised solifenacin. They reported improvement after addition of mirabegron. One patient of bladder pain syndrome had partial improvement on first line management options. However, she improved with the second line drug treatment.

DISCUSSION:

This study highlights the significant burden of urogynecological disorders among women presenting to a tertiary care center in Karachi.

Pelvic organ prolapse was the most frequently reported morbidity. These findings are consistent with other studies that showed pelvic organ prolapse are highly prevalent in LMICs, particularly among women with high parity, early marriage, short inter-pregnancy intervals, and history of obstetric trauma.[1,6,13]

The mean age of the study population aligns with already published data showing that pelvic floor dysfunctions increase in prevalence with advanced maternal age and menopause. The most likely reason is due to estrogen deficiency, which weakens pelvic support structures.[4,14] Most women in this study were parous, and a large majority had undergone vaginal deliveries. These are well-established risk factors for POP and SUI.[4,15]

The association of short inter-pregnancy intervals and chronic constipation with POP in our study is also consistent with findings from previous studies conducted in low-resource settings. Limited maternal healthcare access and heavy physical labor contribute to early pelvic floor damage.[13,16] The significant relationship between chronic constipation and POP is caused by repeated straining, which increases intra-abdominal pressure and weakens pelvic support over time.[17,18] Approximately 66% of our patients were overweight or obese. Increased BMI was significantly associated with both POP and fistula formation in our study. Obesity has been linked with worsening pelvic floor function due to increased intra-abdominal pressure and is an independent risk factor for stress incontinence. Furthermore, high BMI complicates surgical management and increases postoperative morbidity.[19,20]

Fistulas, specially vesicovaginal fistulas, were reported infrequently but showed a strong association with instrumental deliveries. This finding resonates with historical data from South Asia and sub-Saharan Africa, where obstetric fistulas are most likely the result of prolonged obstructed labor or iatrogenic trauma during difficult deliveries.[11,16,21] A small proportion of women presented with structural vulval disorders. These conditions have significant impact on sexual function body image and psychological well-being of the women.

Sacropexy and vaginal hysterectomy were commonly performed surgical interventions in our study. This suggests that although surgical correction remains the mainstay of treatment, long-term success is greatly dependent upon preoperative pelvic floor status, type of surgery, and postoperative care.[12,22] Furthermore, recognition of POP stages through standardized approaches like POP-Q has improved surgical planning and prognosis.

The partial improvement in OAB patients after treatment with single agent also corresponds with the global evidences. The combination therapy with beta-3 agonists like mirabegron is more effective in resistant cases.[23] Pharmacological treatment for OAB in our region is often compromised because of medication cost and limited follow-up. This highlights the need for individualized management strategies.

Our study also emphasizes upon the importance of broad clinical evaluation, patient education, and referral to tertiary care for optimal management. Even though the resources are limited, the high percentage of improvement among patients indicates that a structured clinical approach with patient centered intervention can generate positive outcomes.[24]

Limitations of the study: The retrospective design of this study is a limitation. Patients with the missing data were excluded. Furthermore, outcomes were based on short-term follow-up, and long-term recurrence and quality-of-life assessments were not included.

CONCLUSION:

Urogynecological problems were frequently reported in women. Pelvic organ prolapse were found in large number of women. Many of the women sought treatment at advanced stages of the disease. BMI, short inter-pregnancy intervals and chronic constipation were significantly associated with different conditions. Majority of the women experienced favorable outcomes following surgical or conservative management.

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