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ORIGINAL ARTICLE

Clinico-demographic features and the benign diseases requiring hysterectomy; A Cross Sectional Study.

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ABSTRACT… Objective: To evaluate the relationship between the clinic-demographic features and the benign diseases requiring hysterectomy. **Study Design:** Cross sectional study. **Setting:** Department of Obstetrics & Gynecology, Peshawar Medical College and its Affiliate Tertiary Care Hospitals. **Period:** 03 Oct, 2020 to 03 Oct, 2021. **Methods:** It was a part of the dissertation mandated by the college of physician and surgeons as part of the FCPS program. Using WHO sample size calculator a sample size of 104 patients was obtained and consecutive sampling was done. Logistic regression was used to co-relate clinic-demographic features with different diseases with 5% level of significance. **Results:** Mean of age of the patients was 48.55 years (±10.5years SD), mean height was 5.508 feet (±1.1feet SD), mean weight was 73.20 kg (±15.4kg SD) and the mean BMI was 26.58 (±4.5 SD). Diabetes mellitus was significantly more common in patients with leiomyoma and abnormal uterine bleeding, whereas, the social class and body mass index did not have an impact on the benign gynecological condition ($p>0.05$). **Conclusion:** Patients with symptomatic fibroid uterus and abnormal uterine bleeding are more likely to be hypertensive and diabetic, whereas, BMI, social class and residence area does not significantly differ among patients.

Key words: Fibroids, Leiomyoma, Pelvic Organ Prolapse, Uterine Bleeding.

INTRODUCTION

Hysterectomy is one of the most commonly performed surgical operation performed in obstetrics and gynecology for different indications including benign diseases and malignancies. Over 0.6 million hysterectomies are performed over the year in united states.[1] Deeksha et al reviewed 5687 patients and reported that 60% of the major gynaecological procedures were hysterectomies.[2] Regarding benign diseases requiring hysterectomy, Irum et all shared their experience and reported that 50.7% of patients had uterine leiomyoma requiring hysterectomy in their case series. This was followed by dysfunctional uterine bleeding (39.3%), endometriosis (3.9%), endometrial polyp (3.9%), and benign ovarian masses (2.9%).[3]

Chronic psychological stress and obesity was reported to be a risk factor for leiomyoma in women by Salehi et al.[4] Whereas, Luz A et al suggested that high BMI is not a risk factor, however, low levels of vitamin D in women greater than 45yr does poses a risk for leiomyoma.[5] Regarding dysfunctional uterine bleeding, a group of structural etiologies and nonstructural etiologies exists. Structural etiologies include polyp, adenomyosis, leiomyoma, malignancy and hyperplasia, and non-structure etiologies include coagulopathy, ovulatory dysfunction, endometrial, iatrogenic, and not otherwise classified conditions. Cervicitis, ectropion and cervical cancer can present with history of postcoital bleeding, whereas abdominopelvic pain may indicate pelvic infections, adnexal lesions, or endometriosis.[6] Abnormal uterine bleeding is a symptom of vast medical and surgical conditions each having its own risk factors.

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Utero-vaginal prolapse is a common gynaecological problem all over the world. Prolapse of the vagina, uterus or other pelvic organ are often accompanied by lower urinary tract symptoms, bowel dysfunction, painful intercourse or local pelvic symptoms.[7] Risk factor associated with uterovaginal prolapse include chronic cough, constipation and multiparity.[8] Heavy weight lifting is another risk factor reported by Bassey et al.[9] Bhavana et al concluded from their study that the multiparity and prolonged difficult deliveries were the most common determinants of prolapse of the uterus. Other factors included delivery by untrained personnel, mismanaged third stage of labour involving injury to sphincters and vaginal tears.[10] Age $\geq$ 40 years, duration of labor $\geq$ 24, instrumental delivery, non- utilization of family planning and underweight (BMI $<$ 18.5 kg/m^2) were determinants of uterovaginal prolapse reported by Firdisa G et al.[11]

Patient demographic features play an important role in the overall management of the patient. However, certain demographic features may identify specific conditions or diseases in patients. These features are often noted but overlooked and not attributed to a specific disease in gynecology. The purpose of this study is to find the relationship between demographic features of the patients including BMI, social status, residence, age group, operative procedure, and hypertension with the benign diseases requiring hysterectomy (leiomyoma, abnormal uterine bleeding, uterovaginal prolapse).

Objective

To assess the relationship between demographic features and benign diseases requiring hysterectomy.

METHODS

This cross sectional study was carried out at the Department of Obstetrics & Gynecology, Peshawar Medical College and its affiliate hospitals from 03 Oct, 2020 to 03 Oct, 2021 after approval from ethical committee (418/2020/DMC). A sample size of 104 patients was selected based on 16.3% utero-vaginal prolapse as an indication for hysterectomy using WHO sample size calculator with confidence interval 95%, 7.1% margin of error. Consecutive sampling was done. Patients aged 25-60 years with history of any parity and who had recently underwent abdominal or vaginal hysterectomies were included in the study. Patients with ischemic heart disease (IHD), chronic kidney disease (CKD), and other obstetric complications such as emergency cesarean hysterectomies confirmed on clinical history were excluded. Three benign diseases, uterine fibroids, utero-vaginal prolapse and abnormal uterine bleeding were included for study. Patients clinic-demographic features including BMI, social status, residence, age group, operative procedure, and hypertension were recorded. Logistic regression was used to co-relate clinic-demographic features with different diseases with 5% level of significance. Informed written consent was obtained from all patients prior to the conduct of the study. SPSS v23 was used as statistical tool and Microsoft office 2013 was used in article preparation.

RESULTS

Mean of age of the patients was 48.55 years ($\pm$10.5years SD), mean height was 5.508 feet ($\pm$1.1feet SD), mean weight was 73.20 kg ($\pm$15.4kg SD) and the mean BMI was 26.58 ($\pm$4.5 SD). 36.5% patients were in 25-45 years age group while 63.5% patients were in 46-60 years age group. Sixty six (63.5%) patients underwent abdominal hysterectomy while 38 (36.5%) went through vaginal hysterectomy. Urban and rural population was 71.2% and 28.8% respectively. Sixty eight (65.4%) patients had diabetes mellitus, 53 (51.0%) patients were from poor families, and 17.3% patients were from middle class families while 33 31.7% patients were from rich families. The frequencies of symptomatic fibroid uterus, utero-vaginal prolapse, and abnormal uterine bleeding were 42.3%, 27.9%, and 29.8% respectively. The frequency of diseases in different age groups and its relation with different benign diseases is shown in Table-I. These conditions do not significantly differ among different age groups.

The type of hysterectomy, abdominal or vaginal, does not differ among patients with leiomyoma, abnormal uterine bleeding or uterovaginal

prolapse (p>0.05). Similarly, leiomyoma, abnormal uterine bleeding and uterovaginal prolapse were equally prevalent among patients of rural and urban residence (p>0.05 for each category). Patients with abnormal uterine bleeding and symptomatic fibroid uterus were more likely to be hypertensive, however, they don't reach statistical significance as shown in Table-II.

Diabetes mellitus was significantly more common in patients with leiomyoma and abnormal uterine bleeding (Table-III), whereas, the social class and body mass index did not have an impact on the benign gynecological condition (p>0.05).

DISCUSSION

Among women in reproductive age group, leiomyoma is the most frequently encountered pelvic tumor, and it causes symptoms in approximately 20% of the patients.[12] The location of the fibroids may greatly vary. It can commonly found on the body of the uterus, but they also can be found attached to the oviducts, in the round ligaments, and on the cervix. High BMI has been reported in some studies to be a risk factor for uterine fibroids whereas, other studies negate it.[3,4] Our study also did not show a significant difference between patients of low and high BMI (p>0.05).

Indications of Hysterectomies	Age Groups		Total	P-Value
	25-45 Years	46-60 Years		
Symptomatic Fibroid Uterus	15	29	44	0.657
	39.5%	43.9%	42.3%	
Uterovaginal Prolapse	11	18	29	0.854
	28.9%	27.3%	27.9%	
Abnormal Uterine Bleeding	12	19	31	0.764
	31.6%	28.8%	29.8%	
Total	38	66	104	
	100.0%	100.0%	100.0%	

Table-I. Stratification of indications of hysterectomies with respect to age groups (n=104)

Indications of Hysterectomies	Hypertension		Total	P-Value
	Yes	No		
Symptomatic Fibroid Uterus	21	23	44	0.096
	52.5%	35.9%	42.3%	
Uterovaginal Prolapse	11	18	29	0.944
	27.5%	28.1%	27.9%	
Abnormal Uterine Bleeding	8	23	31	0.083
	20.0%	35.9%	29.8%	
Total	40	64	104	
	100.0%	100.0%	100.0%	

Table-II. Prevalence of hypertension among patients with benign gynecological conditions.

Indications of Hysterectomies	Diabetes Mellitus		Total	P-Value
	Yes	No		
Symptomatic Fibroid Uterus	36	8	44	0.002
	52.9%	22.2%	42.3%	
Uterovaginal Prolapse	17	12	29	0.367
	25.0%	33.3%	27.9%	
Abnormal Uterine Bleeding	15	16	31	0.0175
	22.1%	44.4%	29.8%	
Total	68	36	104	
	100.0%	100.0%	100.0%	

Table-III. Prevalence of DM in patients with different benign gynacological conditions.

Dora et al has reported that increasing age is significant risk factor for the development of fibroids. The incidence of fibroids increases with age and the peak incidence is at age 50 years. Fibroids are extremely rare before puberty, and their frequency decreases after the age of 50 years.[13] The higher incidence rate with increasing age is also reported by Marshal et al.[14] The patients in our study were stratified into two groups; 25-45 year and 46-60 years and no significant difference was observed between the two groups in terms of occurrence of leiomyoma ($p>0.05$). This trend of no difference could be a possible change in the nature of development of uterine fibroids, however, further confirmatory studies are required. Erica et al has reported racial differences in the epidemiology of uterine fibroids, where the prevalence of uterine fibroids were more common in black women.[15] Uterine fibroids are more common in our patients with hypertension and diabetes, however, the cause or effect cannot be discerned in this study ($p<0.05$).

Regarding the risk factors for utero-vaginal or pelvic organ prolapse, Parvathavarthini et al reported that it is closely associated with increasing age, multi-parity and place of delivery (home delivery).[16] Age is a significant risk factor for utero-vaginal prolapse, as reported by Wu JM et al, where in their study, women aged 20-29 years, 50-59 years, and 80 years or older had an incidence of 6%, 31%, and 50% of pelvic organ prolapse (POP) respectively.[17] This is not observed in our study where both age groups had no significant difference with regards to prevalence of utero-vaginal prolapse. Similarly, utero-vaginal prolapse was equally prevalent in patient with and without diabetes and hypertension ($p>0.05$). Grand-multiparity and difficult labour was found to be the most important risk factor for utero-vaginal prolapse by Ojiyi et al.[18] Poor utilization of reproductive health services was a key factor in utero-vaginal prolapse patients in Nigeria.[19]

Abnormal uterine bleeding is a symptom of multiple diseases and is not a disease itself. In our study, patients with abnormal uterine bleeding were more likely to be hypertensive and diabetic ($p<0.05$). BMI and Social class does not seem to relate to abnormal uterine bleeding ($p>0.05$). Matteson et al reported that patients with abnormal uterine bleeding were more likely to be over age, diabetic and have cardio-vascular disease.[20] In a retrospective study by Asma et al, leiomyoma was reported to be the most frequent structural cause for abnormal uterine bleeding, whereas ovulatory or endocrine disorders, polycystic ovarian syndrome being the most common, were the most common non-structural causes.[21] Diabetes and hypertension cannot be established as a cause or effect in this study.

CONCLUSION

Patients with symptomatic fibroid uterus and abnormal uterine bleeding are more likely to be hypertensive and diabetic, whereas, BMI, social class and residence area does not significantly differ among patients with uterine fibroids, abnormal uterine bleeding and utero-vaginal prolapse.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Abida	Study design, Data collection, Literature review.	
2	Sadia Ahmad	Study design, Data collection, Literature review.	
3	Humaira Aman	Study design, Data collection, Results and statistics.	
4	Amjad Ali	Study design, Literature review, Results and statistics, Final review of article.	