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Clinical Epidemiology of Uterovaginal Prolapse

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ABSTRACT

Pelvic organ prolapse (POP) is a bulge or protrusion of pelvic organs and their associated vaginal segments into or through the vagina. It affects about 30% of the women between 20-59 years of age. It is a significant public health problem in most developing countries. This prospective observational study was conducted, in the department of Obstetrics and Gynaecology, Kamla Nehru State Hospital for Mother and Child, Indira Gandhi Medical College, Shimla, for a period of one year, from 1st June 2019 to 31st May 2020. Patients with pelvic organ prolapse were admitted to the ward, a detailed history was recorded in a proforma designed for the study and examination was done. POPQ examination was done.70 patients were admitted in the ward. Majority of the women with prolapse were in age group of age>60 years of age i.e. 60. It was more common with higher parity with para more than or equal to 3 i.e. 60%. POP was observed in 91.1% women who had normal delivery of which 85.7% had home deliveries, 70% of which were conducted by untrained birth attendants, 85.7% women with no episiotomy given.78.57% women had attained menopause. (48.5% of these women resumed work within 15 of delivery. The diversity of symptoms in POP can impact a woman physically, socially, and psychologically and thus affect the quality of life. Thus avoiding its risk factors will go a long way in its prevention.

Keywords: uterovaginal prolapse, Pelvic organ prolapse (POP), protrusion of pelvic organs

INTRODUCTION

Pelvic organ prolapse (POP) is a bulge or protrusion of pelvic organs and their associated vaginal segments into or through the vagina. [(1)] It affects about 30% of the women between 20-59 years of age. It is a significant public health problem in most developing countries. It affects the physical and mental health of the women and despite its high prevalence, has not received significant medical attention. [(2,3)]

Uterine prolapse occurs when the pelvic floor muscles and ligaments stretch and weaken, providing inadequate support to the uterus. It can be due to attenuation of the supportive structures, whether by actual tears or breaks or by neuromuscular dysfunction or both.

This has a multifactorial etiology and comprises large number of predisposing factors which are easily preventable. The most important aetiological factor in prolapse is atonicity and asthenia that follow menopause due to estrogen deficiency and decreased collagen content in the fascia.[(4)]

A birth injury is another important aetiological factor due to excessive stretching of the pelvic floor muscles and ligaments that occur during vaginal delivery, especially if there is premature bearing down before full dilation of cervix when bladder is not empty, prolonged second stage, delivery of a big baby, resumption of heavy work soon after delivery, without any rest or pelvic floor exercises.

Rapid succession of pregnancies and deliveries, raised intraabdominal pressure due to chronic bronchitis, large abdominal tumours, smoking, chronic cough and constipation also predispose to prolapse. [(4)]

Many systems for staging prolapse have been described; currently the system

approved by the International continence society is the Pelvic organ quantification system or POP-Q.

Choice of treatment actually depends on the age of patient, willingness to preserve reproductive function, severity of symptoms, degree of prolapse, and patient's general health.

This condition though not life threatening imposes a significant burden of social and physical restriction of activities and has an impact on psychological wellbeing and overall quality of life. Information on influence of all these risk factors will help to plan a strategy for its prevention and management.

MATERIALS AND METHODS

This prospective observational study was conducted, in the department of Obstetrics and Gynaecology, Kamla Nehru State Hospital for Mother and Child, Indira Gandhi Medical College, Shimla, for a period of one year, from 1st June 2019 to 31st may 2020. Institutional Ethical clearance was obtained prior to commencement of this study. All the subjects who fulfilled the criteria mentioned below were included in the study after taking written informed consent. Patients with pelvic organ prolapse were admitted to the ward. Written informed consent was taken; a detailed history was recorded in a proforma designed for the study. Presenting complaints were noted and elaborated and detailed history was taken for identifying the risk factors. General physical examination, systemic examination and per abdomen examination was done. POPQ examination was done.

RESULTS

During this period 70 patients of uterovaginal prolapse were admitted in the ward, detailed history was recorded in a proforma designed for the study, examination was done and POPQ examination was done and the following outcomes were noted.

Table 1: Age distribution of the study participants

Age group (in years)	Number of subjects (N=70)	Percentage	P value
20-29 years	0	-	0.002
30-39 years	1	1.4%	
40-49 years	7	10%	
50-59 years	20	28.57%	
>60 years	42	60%	

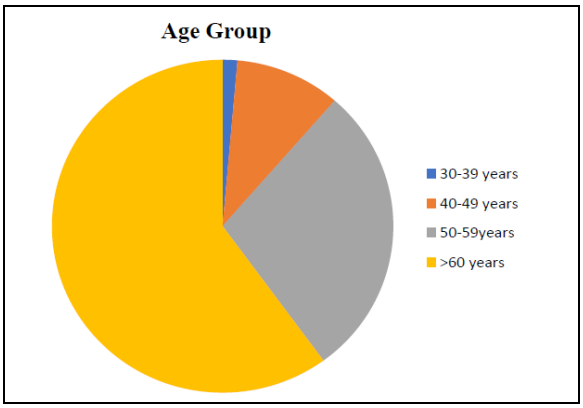
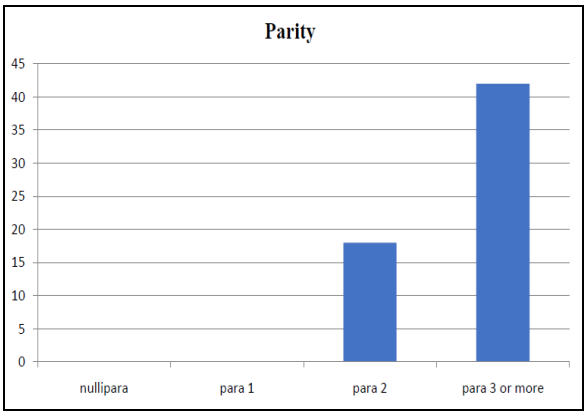


Table 2: PARITY of the study participants

Parity	Number of participants(n=70)	Percentage	P value
nullipara	0	-	0.008
Para 1	10	14.28	
Para 2	18	25.71	
Para 3 or more	42	60	



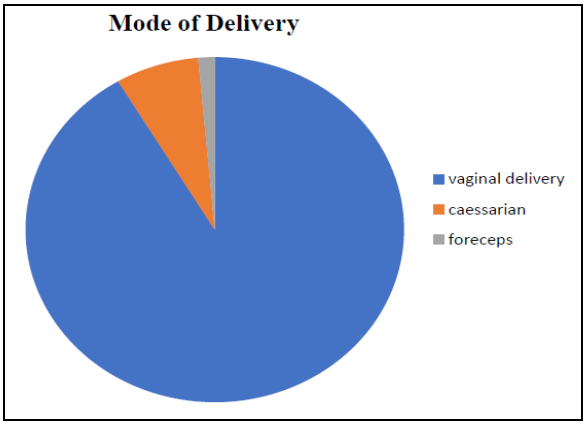


Table 3: Mode of delivery

Mode of delivery	Number	Percentage	P value
Vaginal delivery	64	91.1	0.054
Cesarian section	5	7.1	
Foreceps	1	1.4	

Table 4: Place of delivery

Place of delivery	Number of participants	Percentage	P value
Home	60	85.7	0.013
Hospital	10	14.2	

Table 5: Personal conducting delivery

Personal conducting delivery	Number of participants	Percentage	P value
relatives	49	70.0	0.003
Trained dai	13	18.5	
doctor/nurse	8	11.4	

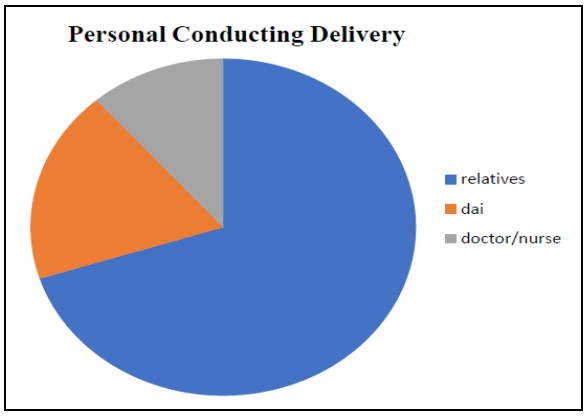
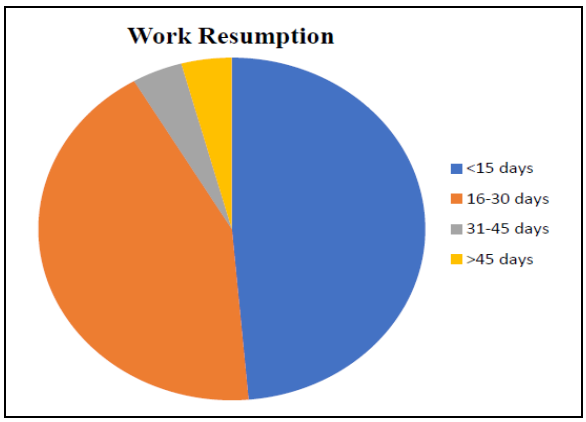


Table 6: Work resumption after delivery

Work resumption	Number of participants	Percentage	P value
<15 days	34	48.5	0.011
16-30 days	30	42.85	
31-45 days	3	4.2	
>45 days	3	4.2	



Majority of the women with prolapse were in age group of age>60 years of age i.e. 60%, as compared to women less than 60 yrs of age. Relation of age with POP was found to be statistically significant (p value 0.002)

2. POP was more common with higher parity with para more than or equal to 3 i.e. 60%. Relation of parity with POP was found to be statistically significant (p value-0.008).

3. POP was observed in 91.1% women who had normal delivery. Relation of mode of delivery with POP was found to be statistically significant.

4. It was observed that 85.7% women of POP had home deliveries. Relation between place of delivery and POP was found to be statistically significant (p value-0.013)

5. POP was observed in 70% deliveries conducted by untrained birth attendants. Relation between personal conducting delivery and POP was found to be statistically significant (p value-0.003).

6. POP was observed in 85.7% women with no episiotomy given. Relation between episiotomy given and POP was found to be statistically significant.

7. Pelvic organ prolapse was observed more frequently in women who resumed work within 15 of delivery (48.5%) as compared to those who resumed it after 16-30 days 42.85% and 4.2% after 31-45 days and 45 days each. Relation between work resumption and POP was found to be statistically significant and was (0.011).

8. Pelvic organ prolapse was observed in 40% women with H/o smoking. Relation between smoking and POP was not found to be statistically significant.

9. The most common presenting complaint in patients of Pelvic organ prolapse was mass coming out of introitus (97.2%), pain abdomen (56.3%), discharge per vaginum (14.2%), difficulty while passing urine and other urinary problems (18.5%). Most of the participants of the present study had more than one complaint at the time of presentation.

10. Other associated problems were difficulty in walking (10%), incomplete evacuation (10%), defecation problems (7.14%), AUB/PMB (5.71%), coital problems (1.4%).

11. Majority of the women with prolapse enrolled in the study had POP Q stage 3 (67.1%). 18.57% women were of POPQ stage 2 and 14.28% women were observed to be of stage 4 (14.28%). It was observed that 1.4% women had 1st degree of prolapse, 8.57% had 2nd degree of prolapse, 75.71%

had 3rd degree of prolapse and 14.28% had 4th degree of prolapse according to Shaw's classification.

12. Pattern of presentation of various participants in the present study in addition to cervical descent were observed and 35.7% women had cystocele and rectocele, 21.4% women had cystocele, rectocele, enterocele. 14.2% had only cystocele. 10% had cystocele and enterocele, 8.57% had both cystocele and urethrocele while 5.7% had cystocele, urethrocele and rectocele and 4.2% had enterocele and rectocele. The relationship between pattern of presentation and degree of prolapse was statistically significant. (p value-0.006)

13. The relation between the degree of prolapse and the presenting complaints. Of all the 1st degree prolapse women none had mass per vaginum. Among the 2nd degree prolapse women 83.33% had mass per vaginum, 16.66% had pelvic pressure, and 83.33% had backache. The most common presenting complaint in women of 3rd degree prolapse was mass per vaginum 100%, 54.71% had pelvic pressure,28.30% with backache, 13.20% with discharge per vaginum and difficulty in passing urine was present in 5.66% of the women.

The relationship between degree of prolapse and presenting complaints was found to be statistically non-significant.

14. Out of the patients that had cystocele, rectocele and enterocele 100% had mass per vaginum and 100% had perineal pressure while 20% had urinary complaints and 13.33% had defecation problems.

Out of all patients that had both cystocele and rectocele 100% had mass per vaginum and perineal pressure each while 8% had urinary complaints and 6.66% had defecation problems.

Among the patients with cystocele 80% had mass per vaginum, 70% had perineal pressure while 10% had urinary complaints. Of all the patients with cystocele and enterocele 100% had mass per vaginum, and pelvic pressure each while 28.57% had urinary complaints.

Of all the patients with rectocele and enterocele 100% had mass per vaginum, 100% had pelvic pressure.

Among all the patients with cystocele and urethrocele 100% had mass per vaginum and pelvic pressure each while 33.33% had urinary complaints.

Among all the patients with cystocele, urethrocele and rectocele 100% had mass per vaginum and pelvic pressure each and 75% had urinary complaints and 50% had defecation problems.

P value for pattern of presentation with presenting complaint was as follows:

With mass per vaginum-0.013 and was statistically significant. With pain abdomen-0.053 and was statistically non significant. With urinary and bowel complaints-0.653 and 0.468 respectively and was statistically non significant.

DISCUSSION

In our study the incidence of prolapse at age>60years was 60.6% while that in women of age<60 yrs was 39.4% The relation of age with prolapse was also found to be statistically significant.

In study by Mishra et al (2019)[22] maximum incidence of prolapse in age>60 years was 21.56% and that in age<60 years was found to be 78% and in study by Nehete S.P (2018)[19] 26% women having prolapse were in the age group of >60 years.

Age has been reported to be an independent risk factor for the development of POP in many studies; however, in the present study although it was found that women with POP were significantly older, age itself did not come out to be a risk factor for POP development.

These observations alone can be explained by the known fact that process of aging causes loss of collagen and weakness of fascia and connective tissue and the risk of prolapse.

The findings of the present study revealed that there is significant degree of association with the number of delivery and POP. In the present study parity of>/= 3 was found to be present in 60% patients.

In study by Kulkarni et al (2018)[18] parity of 3 or more was found in 76.5% women whereas in study by Sumathi N, Nandini C.C (2017)[25] parity of 3 or more was found in 64% of the patients which was comparable.

In the present study 51.4% women were uneducated and 45.7% were educated upto primary school and 2.8% upto 10th and above. In study by Hakan et al 63.4% were educated upto primary school and 36.6% upto 10th and above this is due to the study conducted in the western population and In study by Nehete S.P (2018)[19] 52% were uneducated, 18% were educated upto 5th, 30% upto 10th and above which was comparable to the present study. Non-obstetric factors such as education, occupation and social status did not show any relationship with uterine prolapse, though less education was reported to be a factor associated with uterine prolapse, the present analysis did not show any such association.[11]

In our study 40% women were smokers whereas in study by Thapa et al 45% had history of smoking and in study by Hakan et al 83% had history of smoking. Smoking decreases the bioavailability of of estrogen by reducing conversion of androgens to estrone, increased 2-hydroxylation of estradiol and stimulation of higher levels of SHBG also it causes asthenia in women it also causes chronic cough and may predispose women to POP.

In our study 91.1% patients had vaginal delivery, out of which 70% were by untrained birth attendants, whereas in study conducted by Thapa et al (2014)[10] and Mishra et al 100 % deliveries were vaginal deliveries and 85.7% were found to be at home and 70% deliveries were conducted by untrained birth attendants. Whereas in study by Thapa et al (2014)[10] 100% had vaginal delivery among which 96.3% had home deliveries by untrained birth attendants. In study by Mishra et al (2019)[22] all patients delivered vaginally and 84.5% patients delivered at home by untrained birth attendants which were comparable. These observations along with age can be explained by the known fact that process of aging causes loss of collagen and weakness of fascia and connective tissue and the risk of prolapse gets increased during subsequent child births.[9]

These observations support the fact that poorly supervised labor and delivery conducted by untrained personnel in home environment lead to faulty delivery practices like bearing down for a long time before full cervical dilatation, not performing episiotomy where indicated and not stitching perineal tears this indicates that the unsupervised labour, prolonged labour duration and unattended delivery leads to extensive damage to the pelvic floor muscles, supporting ligaments of the uterus and thus leads to greater incidence of pelvic organ prolapse.

As it usually takes 6 weeks for the women to attain the pre-pregnant state and 3 months for pelvic ligaments to function normally again, adequate nutrition and rest is essential during puerperium to speed up the pace of recovery history of doing heavy manual work in post natal period was reported by 95% of participants in this study with 48.5% within 15 days, 47.15% within 15-45 days.[9] In study by Thapa et al it was found that 66% started working in<15 days, 31% in 15-45 days and 3%>45 days. In study by Deepti et al a large percentage (78%) of patients resumed their household and agricultural chores within one month of the childbirth.

In the present study the most common presenting complaint in patients of Pelvic organ prolapse was mass coming out of introitus (97.2%), pain abdomen (56.3%), discharge per vaginum (14.2%), difficulty while passing urine and other urinary problems (18.5%). Most of the participants of the present study had more than one complaint at the time of presentation. Whereas in study by Parvathavarthini K, 100% women had mass per vaginum, 9.2% had pain abdomen, 33.1% had vaginal discharge, 46.2% had urinary problems and 10.8% had defecation problems and AUB

was seen in 0.8% patients. In study by Mishra et al 73.1% had mass per vaginum, 43.2% had pain abdomen, 56.7% had vaginal discharge, 52.5% had urinary problems and 27.8% had defecation problems and 3.09 had coital problems.

The diversity of symptoms in POP as mentioned above indicates how it can impact a woman physically, socially, and psychologically and thus affect the quality of life. Although this condition is non fatal the pain and discomfort experienced by these patients hampers the quality of their day to day life, affecting their ability to earn a livelihood and making them socially withdrawn.

In the present study prolapse stage 2 was seen in 18.57% women, 67.14% had stage 3 prolapse and 14.28 had stage 4 prolapse, whereas in study by Nehete S.P (2018)[19] 10% women had stage 1 prolapse, 30% had stage 2 prolapse, 42% had stage 3 prolapse and 18% had stage 4 prolapse while in study by Sumathi N (2017)[25] stage 1 prolapse was seen in 6.2% women, stage 2 in 4.2%, stage 3 in 8.5% women and stage 4 in 80.8% women however in study by Avotunde et al (2016)[13] maximum women were seen of stage 2 prolapse (74.2%) and stage 3 and 4 had 22.6% and 3.2% women respectively.

CONCLUSION

In our study it was found that women with POP were significantly older, age itself did not come out to be a risk factor for POP development. In the present study parity of>/=3 was found out to be a significant risk factor in the development of prolapse. Non-obstetric factors such as education, occupation and social status did not show any relationship with uterine prolapse, though less education was reported to be a factor associated with uterine prolapse, the present analysis did not show any such association but has been significant in other studies hence education, can help in spreading awareness in women and understanding the risk factors and avoidance of which may help in decreasing POP in them indirectly.

The observations of the present study support the fact that poorly supervised labor and delivery conducted by untrained personnel in home environment lead to faulty delivery practices like bearing down for a long time before full cervical dilatation, not performing episiotomy where indicated and not stitching perineal tears this indicates that the unsupervised labour, prolonged labour duration and unattended delivery leads to extensive damage to the pelvic floor muscles, supporting ligaments of the uterus and thus leads to greater incidence of pelvic organ prolapse.

It usually takes 6 weeks for the women to attain the pre-pregnant state and 3 months for pelvic ligaments to function normally again, adequate nutrition and rest is essential during puerperium to speed up the pace of recovery hence women should be given adequate rest in the postpartum period.

Chronic disease like cough and constipation raise intraabdominal pressure and hence may predispose women to POP. Smoking also causes estrogen deficiency and makes women asthenic and may predispose women to POP.

The diversity of symptoms in POP can impact a woman physically, socially, and psychologically and thus affect the quality of life. Improving education status, avoidance of smoking, limiting family size, supervised delivery by trained birth attendants, puerperal Kegel exercises, and adequate rest after delivery and avoiding heavy manual work will go a long way in prevention of pelvic organ prolapse.

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