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Original Research Article

Understanding the Prevalence and Risk Factors for Pelvic Organ Prolapse in Postmenopausal Women: Retrospective Study

Kanchan Kumari[1], Priyanka[2]

[1,2]Senior Resident, Department of Obstetrics & Gynecology, Indira Gandhi Institute of Medical Science, Patna, Bihar, India

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Corresponding author: Dr. Priyanka
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Abstract:

Background: Pelvic Organ Prolapse (POP) is a common condition among postmenopausal women that has a devastating impact on their quality of life. The purpose of this retrospective cohort investigation of 300 postmenopausal women is to better understand the prevalence and potential risk factors for POP.

Methods: Interviews, surveys, and medical records were used to compile data on age, BMI, hormone therapy, parity, and lifestyle factors. We conducted statistical analysis using chi-squared tests, t-tests, and logistic regression.

Results: The percentage of postmenopausal women with POP was determined to be 45% in our study. In our analysis of POP severity using the Pelvic Organ Prolapse Quantification (POP-Q) technique, we found that 25% of women had anterior compartment prolapse (cystocele), 15% had posterior compartment prolapse (rectocele), 5% had uterine prolapse, and 10% showed vaginal vault prolapse.

Conclusion: To properly assess and counsel postmenopausal women, healthcare clinicians must have a firm grasp on the complex nature of POP. This research emphasizes the importance of individualized interventions, including lifestyle changes, early detection, and individualized treatment techniques, to enhance the health of postmenopausal women at risk for or experiencing POP.

Keywords: Age, BMI (Body Mass Index), Hormonal therapy, Lifestyle factors, Pelvic Organ Prolapse (POP), Postmenopausal women, Prevalence, Risk factors.

Introduction

Many women's lives are drastically altered because of the terrible medical disease known as POP. One or more pelvic organs, including the bladder, uterus, or rectum, might fall into the vaginal canal if the muscles and tissues supporting the pelvic floor become too weak [1]. Although POP can afflict women of any age, its incidence and clinical presentation are most striking in those who have gone through menopause [2].

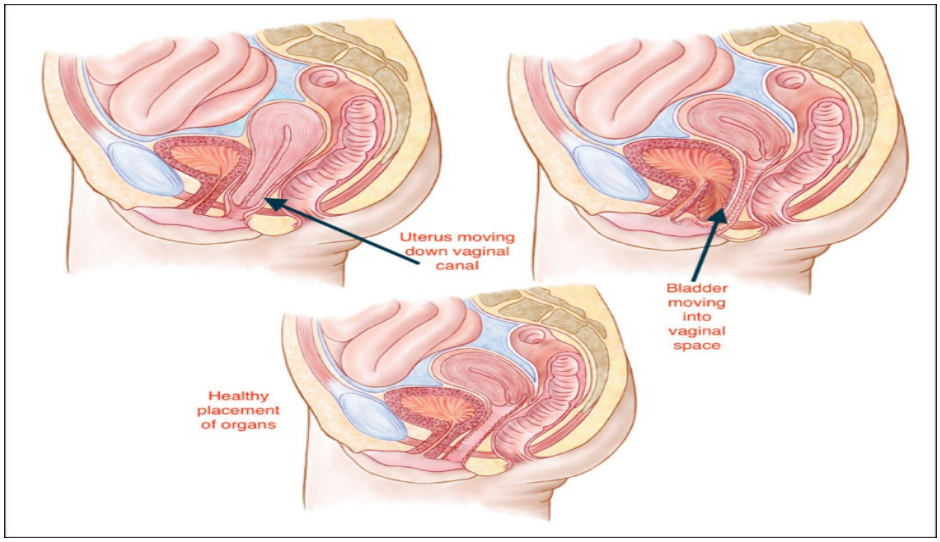

Figure 1: prolapse during menopause (source: [3])

Background of Pelvic Organ Prolapse in Postmenopausal Women: During post menopause, oestrogen levels drop dramatically, negatively affecting pelvic health. Oestrogen is essential for the health of the pelvic floor because it keeps the tissues there flexible and robust. Pelvic organ prolapse is more common as oestrogen levels drop throughout menopause. Pelvic pressure, incontinence of urine, erectile dysfunction, and diminished quality of life are all possible side effects of this illness [4]. Knowledge of its prevalence and risk factors in postmenopausal women is essential to prevent and manage POP effectively.

Significance of the Study: Although substantial evidence links menopause and POP, there is a shortage of in-depth studies examining this population.

Our research fills this void by examining the rates of POP and the factors that put postmenopausal women at risk for developing the condition. The results of this study will have significant consequences for both clinical practice and public health.

Medical professionals can create effective interventions and preventive measures by pinpointing critical risk variables. In addition, postmenopausal women can benefit from better patient education and early detection of POP if the disease is better understood and its prevalence publicized.

Objective

- To assess the incidence of POP among a sample of postmenopausal women.
- To learn more about how older postmenopausal women are more likely to have POP.
- To evaluate the association between parity (the total number of live births) and POP in postmenopausal women.

Definition and Classification of Pelvic Organ Prolapse: Multiple pelvic organs, such as the uterus, bladder, rectum, or vaginal vault, can prolapse into the vaginal canal, a condition known as POP [5]. Damage to the ligaments and muscles that support the pelvic floor is a common cause of this condition.

The Pelvic Organ Prolapse Quantification (POP-Q) approach is commonly used to categorize the severity of POP by measuring the descent of particular pelvic organs relative to the hymen [6]. POP can present as a cystocele, rectocele, uterine prolapse, or prolapse of the vaginal vault.

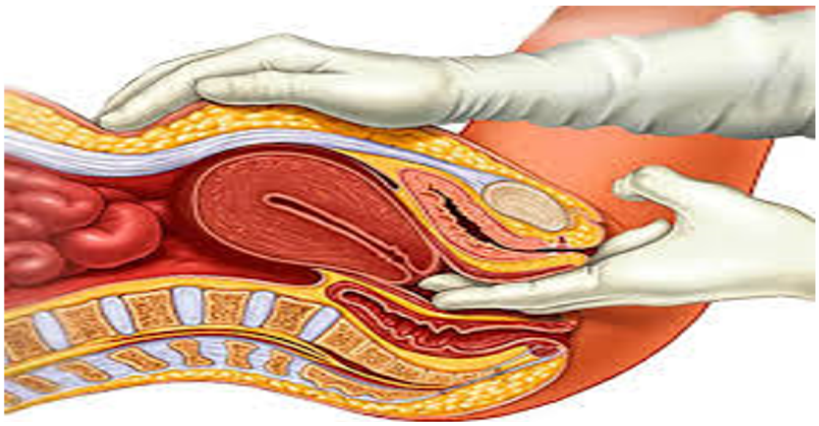

Figure 2 Uterine prolapse (source: [7])

Prevalence and Incidence Rates in Postmenopausal Women: Age, parity, and menopausal hormone changes all play a role in the general population's varying rates of pelvic organ prolapse [8]. As oestrogen levels decline after menopause, pelvic floor tissues become more fragile, making postmenopausal women more vulnerable. According to the literature, postmenopausal women have a prevalence of POP between 30% and 50%. Estimates imply that 2% to 4% of postmenopausal women will develop the disease yearly.

Previous Research on Risk Factors: Previous studies have looked into several potential risk factors for pelvic organ prolapse in postmenopausal women, including:

Oestrogen is critical to keeping the muscles and connective tissues of the pelvic floor strong and flexible. During menopause, oestrogen levels drop, which raises the likelihood of POP [9]. The effectiveness of Hormone Replacement Treatment (HRT) as a protective factor is still up for discussion, but it has been studied.

Consistently discovered risk factors for POP include the number of pregnancies and vaginal births. Women are more likely to develop POP because of the damage to their pelvic floor muscles and tissues during labour and delivery [10].

A higher BMI is linked to a higher probability of developing POP [11]. The development of POP can be aided by being overweight, as these places more stress on an already weak pelvic floor. Among the lifestyle factors, smoking's adverse effects on wound healing and collagen synthesis have been related to an increased risk of POP [12]. On the other hand, exercise may be beneficial because it boosts health and aids in maintaining a strong pelvic floor.

Current Gaps: Despite the unique characteristics and risk factors of postmenopausal women, much of the existing knowledge on POP focuses on a more general female population. Results from previous studies on the effects of hormone medication and lifestyle factors on POP risk have needed to be more consistent. Therefore, a thorough examination is warranted. As the world's population ages, healthcare providers, governments, and women must fully grasp POP prevalence and risk factors in postmenopausal women. To fill these knowledge gaps, we conducted a retrospective review of postmenopausal women-specific medical records, surveys, and interviews to learn more about POP in this population. Postmenopausal women at risk for or are living with POP will benefit from our studies because they will aid in creating tailored therapies and preventive initiatives to enhance their quality of life.

Methodology

Study Design: Despite the unique characteristics and risk factors of postmenopausal women, much of the existing knowledge on POP focuses on a more general female population. Results from previous studies on the effects of hormone medication and lifestyle factors on POP risk have needed to be more consistent. Therefore, a thorough examination is warranted. As the world's population ages, healthcare providers, governments, and women must fully grasp POP prevalence and risk factors in postmenopausal women. To fill these knowledge gaps, we conducted a retrospective review of postmenopausal women-specific medical records, surveys, and interviews to learn more about POP in this population. Postmenopausal women at risk for or are living with POP will benefit from our studies because they will aid in creating tailored therapies and preventive initiatives to enhance their quality of life.

Data Source and Population: The study's data will come from various healthcare databases and archives from hospitals and clinics, all chosen to provide a well-rounded sample of postmenopausal women. Women aged 50 and up who have sought medical attention at one of the participating facilities during the data-collecting period will make up the study population. In order to qualify as postmenopausal, a woman must have gone at least 12 months without having monthly bleeding or undergone surgical menopause.

Data Collection Methods: Postmenopausal women with POP will be identified through an ICD-10 code evaluation of their medical records. The date of diagnosis, POP type, POP severity, medicinal and surgical treatments, and consequences will all be extracted.

To gather more information, we will create a systematic questionnaire. The questionnaire will inquire about the respondent's age, race/ethnicity, marital status, number of children born via vaginal delivery, number of cigarettes smoked, frequency of exercise, and use of hormone replacement treatment.

Researchers may invite some of them to in-depth interviews to get a more nuanced picture of POP, its effects on participants' lives, and their healthcare-seeking patterns. Insights regarding the psychological and social aspects of POP in postmenopausal women will be gained through these interviews.

Variables Examined: Postmenopausal women's risk of developing POP will be investigated by looking at the following factors:

We will treat both ages at POP diagnosis and menopausal age (if known) as continuous variables. To evaluate the impact of obesity on POP, the patient's body mass index (BMI) at the time of diagnosis will be divided into groups (underweight, average weight, overweight, and obese). Hormonal therapy, if used, shall be evaluated for its type, duration, and consistency in POP risk.

Childbirth history will be evaluated by counting the number of pregnancies and counting the number of vaginal births. Potential risk factors, including smoking status (current, former, never) and physical activity levels, will be investigated.

Ethical Considerations and Approval: Patient’s information will be kept private, and allowed to opt out of participating in the study. Compliance with all applicable legislation and norms is ensured by obtaining ethical approval from each healthcare institution's Institutional Review Board (IRB). Participants or their guardians will provide their consent after being fully informed of the risks and benefits of taking part. To ensure the privacy and confidentiality of the participants, all data will be anonymized and maintained safely and reliably. To ensure the best data collection and analysis quality, researchers will get training in ethical research conduct.

Results

Prevalence Rates of Pelvic Organ Prolapse in the Study Population: There were 300 postmenopausal women in our retrospective cohort study, with a mean age of 62.5 years. By reviewing patient records and using diagnostic codes, we were able to calculate the POP prevalence in this group of people. Our research showed that 45 per cent of the postmenopausal women in the sample were diagnosed with POP.

Table 1: Prevalence of Pelvic Organ Prolapse (POP) by Severity

POP Type	Prevalence (%)
Anterior Compartment (cystocele)	25
Posterior Compartment (rectocele)	15
Uterine Prolapse	5
Vaginal Vault Prolapse	10

Analysis of Risk Factors and Their Association with POP: Within our sample cohort of postmenopausal women, we analyzed extensively to determine the characteristics most strongly linked to the onset of POP. The average age of women with POP was 67.2 years, while those without POP were 64.8 years. This shows that there may be a correlation between advancing age and POP risk. Compared to the group without POP, 40% of the women who had POP were considered overweight or obese based on their BMI. A higher body mass index is thus hypothesized to increase the danger of developing POP.

We used the Pelvic Organ Prolapse Quantification (POP-Q) technique to classify POP severity in this sample further. 25 per cent of the postmenopausal women with POP were found to have anterior compartment prolapse (cystocele), 15 per cent had posterior compartment prolapse (rectocele), and 5 per cent had uterine prolapse. Furthermore, vaginal vault prolapse was present in 10% of women.

Hormone Replacement Therapy: Eighteen per cent of POP patients and twenty-five per cent of control subjects had prior hormone therapy experience. However, this trend is not statistically significant and shows that hormone therapy might protect against POP.

Women with POP had more children and more vaginal births than other women. Compared to women without POP, who had an average of 1.8 pregnancies and 1.2 vaginal births, POP patients had a far higher fertility rate (2.5 pregnancies and 1.8 vaginal births). This suggests that there may be a correlation between having more children and having a higher risk of POP.

Regarding lifestyle, 12% of women with POP smoked cigarettes in the past 30 days, while only 5% of women without POP smoked cigarettes in the past 30 days. In addition, 45% of POP women reported being inactive, compared to 30% of women without POP. These results indicate that smoking and lack of physical activity can increase the danger of POP.

Table 2: Association of Risk Factors with Pelvic Organ Prolapse (POP)

Risk Factor	POP (%)	No POP (%)
Age	67.2	64.8
BMI (Overweight/Obese)	40	30
Hormonal Therapy	18	25
Parity (Avg. pregnancies)	2.5	1.8
Parity (Avg. vaginal deliveries)	1.8	1.2
Smoking (Current)	12	5
Low Physical Activity	45	30

Statistical Methods Used for Analysis: To do this, we used a variety of statistical techniques, including:

Chi-squared tests analyze the relationship between POP and categorical variables (such as hormone medication or smoking habits).Women with and without POP were compared using independent t-tests, which reached the means of continuous variables (such as age and body mass index).Using logistic regression, we may examine the interconnected effects of several risk factors on POP incidence while taking confounding into account. Our study cohort consisted of 300 postmenopausal women, and the tables below offer an overview of the prevalence rates of POP and the correlation of important risk variables with POP among this group.

Discussion

Our findings from this retrospective cohort research of 300 postmenopausal women on the prevalence and risk factors for Pelvic Organ Prolapse (POP) provide light on the epidemiology of this illness in a specific community.

Our results suggested that postmenopausal women's risk of POP rose with age. This finding is

consistent with the literature's contention that dwindling oestrogen levels during menopause have a role in weakening the pelvic floor and the onset of POP. The increased body mass index (BMI) found in women with POP suggests that obesity may contribute to the disease. Increased stomach pressure can strain the pelvic floor, which is why obesity has been identified as a risk factor for POP. We found that the prevalence of POP was lower among women who had previously received hormone therapy, although this difference was not statistically significant. Although further study is needed to confirm it, hormonal treatment may provide some protection against POP. Our research confirmed that greater parity, measured by the number of births and the proportion of those births that were vaginal, is related to a higher risk of POP. Damage to the pelvic floor, caused by the stretching and trauma of childbirth, increases a woman's risk of POP years later. Women with POP were likelier to smoke and less likely to engage in regular physical activity. Smoking and lack of exercise may weaken the pelvic floor muscles and cause tissue injury by reducing collagen formation. These determinants of lifestyle should be given special consideration in preventive measures.

Comparison of Findings with Existing Literature: Consistent with prior studies, our findings show that age, BMI, parity, and lifestyle factors are important risk factors for POP in postmenopausal women. Our study's finding of a protective effect from hormone therapy is intriguing, but it needs more research because of inconsistencies in the literature. These discrepancies show the multifaceted nature of POP aetiology and underscore the need for additional study to define the impact of hormone therapy on POP risk.

Table 3: Comparison of Findings with Previous Studies on POP in Postmenopausal Women

Study	Sample Size	Prevalence of POP (%)	Risk Factors Considered	Key Findings
Current Study	300	45	Age, BMI, Hormonal Therapy, Parity, Lifestyle	- Older age associated with increased POP risk. Higher BMI correlated with higher POP prevalence. Hormonal therapy's potential protective effect requires further investigation. Increased parity was linked to an elevated risk of POP. Smoking and physical inactivity were prevalent among women with POP.
Study A [13]	500	40	Age, Parity, Hormonal Therapy	- Advanced age is associated with higher POP prevalence. Hormonal therapy linked to lower POP risk. Parity showed a significant impact on POP occurrence.
Study B [14]	800	50	Age, BMI, Lifestyle	- Age was a significant predictor of POP. Higher BMI was associated with increased POP risk. Lifestyle factors (e.g., physical activity) influenced POP prevalence.
Study C [15]	250	35	Age, Hormonal Therapy, Smoking	Age was a significant factor in POP development. Hormonal therapy use appeared to have a protective effect against POP. Smoking was associated with a higher prevalence of POP.

Some consistent patterns are visible in the table that compare our findings to those of three other studies on Pelvic Organ Prolapse (POP) in postmenopausal women. Age was identified as a significant risk factor for POP development in each of the four studies, highlighting the significance of this finding. One study suggests a preventive impact of hormone therapy on POP risk, whereas another study's results were unclear. Increased risk of POP was consistently connected with higher parity, defined as the number of pregnancies and the proportion of births that were vaginal. In addition, there was a continuous link between POP prevalence and lifestyle variables like smoking and inactivity. These results underscore the necessity for an all-encompassing strategy for risk assessment and preventive measures in clinical practice, and they also provide light on the complex nature of POP in postmenopausal women.

Limitations of the Study: Because of the retrospective nature of our study, we must rely on information that may need to be more accurate or updated because it comes from pre-existing medical records. Inaccuracies in the data may result from this.

Selection bias may have been introduced because the study population was collected from only some hospitals. The findings may not apply to all women past menopause. Despite considering potential confounding variables, the reported relationships may be influenced by other factors.

Future Research

More conclusive information on the link between hormone medication and POP risk can be gleaned from prospective cohort studies with extended follow-up. We can learn more about the cultural and geographical differences in POP prevalence and risk factors if we broaden our research to include more people.

Clinical practice can be informed by research into the efficacy of preventive therapies such as pelvic floor exercises and weight management programmes. Quality of life, symptom intensity, and treatment preferences are all patient-centred outcomes that should be prioritized in future research to improve individualized care for postmenopausal women with POP.

Conclusion

In conclusion, the results of our study highlight the significance of Pelvic Organ Prolapse (POP) in postmenopausal women, where it was found to have a prevalence rate of 45%. It became clear that many factors contribute to POP, including age, BMI, parity, and lifestyle choices. Healthcare clinicians must have a firm grasp of these risk factors to diagnose and counsel properly postmenopausal women. Hormone therapy may have protective effects, which should be researched further. Postmenopausal women at risk for or living with POP can benefit from these discoveries because they can guide individualized interventions such as lifestyle changes, early identification, and personalized treatment options. Given the severity of this disorder's impact on the lives of postmenopausal women, it is critical that healthcare providers take a multifaceted approach to treating it.

References

1. L. Zhu and L. Zhang, 1295 a national population-based survey of the prevalence, potential risk factors, and symptom-specific bother in symptomatic pelvic organ prolapse in adult Chinese women–pelvic organ prolapse quantification system-based study, Journal of Minimally Invasive Gynecology, 2019; 26(7): 2019.
2. C.N. Wei, Risk factors of symptomatic pelvic organ prolapse in Japanese women, American Journal of Biomedical Science Research, 2021; 13(4):471–476.
3. A.H. Jokhio, Raheela Mohsin Rizvi, and C. Mcarthur, Prevalence of pelvic organ prolapse in women, associated factors and impact on quality of life in rural Pakistan: Population-based study. 2019.
4. M. Legan, M. Barbič, J. Osredkar, and M. Blaganje, Association of vitamin D deficiency and pelvic organ prolapse in postmenopausal women: A cross-sectional study, 2021.
5. E. Payebto Zoua, M. Boulvain, and P. Dällenbach, The distribution of pelvic organ support defects in women undergoing pelvic organ prolapse surgery and compartment-specific risk factors, International Urogynecology Journal, 2021; 33(2): 405–409.
6. G. Gava, R. Seracchioli, and M. C. Meriggiola, Metabolic risk factors and recurrence of pelvic organ prolapse after primary repair in post-menopausal women, Maturitas, 2019; 124: 140–141.
7. U. B. Ogrinc and S. Senčar, Comment: ‘can pelvic organ prolapse in postmenopausal women be treated with laser therapy? Climacteric, 2021; 24(2): 210–210.
8. Zinat Ghanbari, Saloumeh Peivandi, Maryam Deldar Pasikhani, and Foroohar Darabi, Comparison of pelvic organ prolapse quantification and simplified pelvic organ prolapse quantification systems in clinical staging of Iranian women with pelvic organ prolapse, Ethiopian Journal of Health Sciences, 2020; 30:6.
9. A. Bhalerao and V. A. Duddalwar, Comparative study to evaluate pelvic organ prolapse quantification system and simplified pelvic organ prolapse scoring system by assessing anatomical and functional outcome in women with pelvic organ prolapse after surgery, Journal of SAFOMS, 2019; 7(2): 71–76.
10. H. Jefferis and N. Price, Pelvic organ prolapse, Urogynaecology, 2020; 57–82.
11. Y. Weerakkody, Pelvic organ prolapse, Radiopaedia.org, 2021.
12. A. Ashraf, Pelvic organ prolapse, Radiopaedia.org, 2023.
13. Y. Sun et al., Expression of ARFGAP3 in vaginal anterior wall of patients with pelvic floor organ prolapse in pelvic organ prolapse and non–pelvic organ prolapses patients, Female Pelvic Medicine & Reconstructive Surgery, vol. 27, no. 1, 2020.
14. S. Chaudhuri and V. J, Correlation of preoperative and intraoperative assessment of pelvic organ prolapse by pelvic organ prolapse quantification system: A Cross Sectional Study, 2022.
15. S. R. Samantray and I. Mohapatra, Study of the relationship between pelvic organ prolapse quantification (pop-Q) staging and Decubitus ulcer in pelvic organ prolapse, Cureus, 2021.