ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at:www.ijmacr.com

Volume – 8, Issue – 2, March - 2025, Page No. : 103 – 110

A Study of Histological Findings in Women with Post-Menopausal Bleeding in A Tertiary Care Hospital

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How to citation this article: Dr. Simrenjeet Kour, Dr. Erum Siddiqui, Dr. Ifsha Shamim, "A Study of Histological Findings in Women with Post-Menopausal Bleeding in A Tertiary Care Hospital", IJMACR- March - 2025, Volume – 8, Issue - 2, P. No. 103 – 110.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: Postmenopausal bleeding (PMB) is a significant clinical concern, often indicating underlying endometrial pathology, including endometrial hyperplasia and cancer. This study investigates the histological findings in women presenting with PMB at a tertiary care hospital.

Methods: This prospective study was conducted at the Department of Gynaecology and Obstetrics, Government Medical College, Jammu from January 2024 to December 2024. In the study, 100 Women aged 45 years or older with a history of amenorrhea for at least 12 months and who underwent endometrial sampling were included. The data regarding demographic information, clinical history, and histopathological reports were collected through a pre-defined format.

Results: A total of 100 women were analyzed. The mean age of participants was approximately 51.7 years. The majority of cases were from the middle socioeconomic class (56%) and urban areas (60%). Obesity (30%) and diabetes (22%) were the most common comorbidities. Histopathological findings revealed endometrial atrophy (40%) as the most prevalent, followed by proliferative endometrium (25%) and disordered proliferative endometrium (10%). Endometrial carcinoma was detected in 5% of cases.

Conclusion: The study underscores the importance of comprehensive evaluation in women with PMB. While benign conditions like endometrial atrophy are common, the presence of premalignant and malignant lesions necessitates thorough diagnostic workup and timely intervention to improve outcomes for postmenopausal women.

Keywords: Postmenopausal bleeding, endometrial pathology, hyperplasia.

Introduction

Postmenopausal bleeding is defined as any vaginal bleeding occurring after at least 12 months of

amenorrhea following the cessation of menstruation. It is a significant clinical concern as it can be a harbinger of underlying endometrial pathology, including endometrial hyperplasia and endometrial cancer [1].The incidence of PMB varies across populations, but it is estimated to affect approximately 5-10% of postmenopausal women [2]. Given the potential for serious underlying conditions, prompt evaluation and appropriate management of PMB are crucial.

The endometrium, the inner lining of the uterus, undergoes cyclical changes throughout a woman's reproductive years under the influence of fluctuating hormone levels. After menopause, with the decline in estrogen production, the endometrium typically becomes atrophic and inactive [3]. Any bleeding occurring after this period raises suspicion of an underlying pathological process. The most common causes of PMB include benign conditions such as endometrial atrophy, endometrial polyps, and submucosal fibroids. However, PMB can also be a manifestation of premalignant or malignant conditions, such as endometrial hyperplasia and endometrial carcinoma [4].

Endometrial hyperplasia is characterized by an abnormal proliferation of endometrial glands, often in response to unopposed estrogen stimulation. It is considered a precursor to endometrial cancer, with the risk of progression depending on the type and severity of hyperplasia [5] Endometrial carcinoma is the most common gynecological malignancy in developed countries, and PMB is the presenting symptom in the vast majority of cases [1]. Other less common causes of PMB include cervical polyps, cervical cancer, vaginal atrophy, and use of certain medications such as hormone replacement therapy.

Histopathological examination of endometrial tissue obtained through endometrial biopsy or dilatation and curettage is the gold standard for evaluating PMB and establishing a definitive diagnosis [2]. Histological assessment allows for the identification of benign, premalignant, and malignant endometrial changes, guiding appropriate management strategies. The histological findings in PMB can range from normal atrophic endometrium to various forms of endometrial hyperplasia and endometrial carcinoma [3]. The histological subtype and grade of endometrial carcinoma are important prognostic factors that influence treatment decisions and patient outcomes.

Several factors have been associated with an increased risk of developing PMB and endometrial pathology. These include obesity, hypertension, diabetes mellitus, nulliparity, late menopause, and use of unopposed estrogen therapy [4]. Early detection and appropriate management of PMB are essential to minimize the risk of progression to endometrial cancer. The management of PMB depends on the underlying cause and may involve medical or surgical interventions. Medical management may include hormone therapy or other medications to control bleeding and address underlying conditions. Surgical interventions, such as hysterectomy, may be necessary in cases of endometrial hyperplasia or endometrial cancer [1].

This study aims to investigate the histological findings in women presenting with PMB at a tertiary care hospital.

Methodology

This prospective study was conducted at the Department of Obstetrics and Gynaecology, SMGS Hospital, Government Medical College, Jammu, a tertiary care hospital from January 2024 to December 2024. The study population comprised all women presenting with

postmenopausal bleeding at the Department of Obstetrics and Gynecology during the study period. PMB was defined as any episode of vaginal bleeding occurring after at least 12 months of amenorrhea following the cessation of menstruation. [(1)]. The information regarding demographic information, clinical history, presenting symptoms, and histopathological reports were collected through a pre-defined format after obtaining consent from the patients.

Inclusion Criteria

Women were included in the study if they met the following criteria:

- Age 45 years or older with PMB.
- History of amenorrhea for at least 12 months before the onset of bleeding.
- Underwent endometrial sampling (either endometrial biopsy or dilatation and curettage) for histopathological evaluation.
- Complete medical records available for review.

Exclusion Criteria

Women were excluded from the study if they met any of the following criteria:

- History of hormone replacement therapy within the past 3 months.
- Post-menopausal bleeding due to extrauterine causes
- Use of anticoagulant medications.
- History of endometrial or cervical cancer.

Data Collection

For each participant, the following data were collected: age, parity, body mass index, menopausal status, duration of postmenopausal bleeding, associated symptoms, type of endometrial sampling procedure, and histopathological diagnosis. Abdominal, speculum, and bimanual pelvic examinations were performed to assess the cervix and determine the size, position, and mobility of the uterus. Cervical smears were obtained, and each participant underwent a transabdominal or transvaginal ultrasound scan to evaluate the endometrial thickness and detect any other pelvic pathology. If the ET was less than 4 mm, expectant management was allowed, but if bleeding recurred or persisted, endometrial sampling was performed. If the ET was greater than or equal to 4 mm, endometrial sampling was done immediately without resorting to the expectant approach. Endometrial curettage was systematically carried out, and the same pathology laboratory evaluated the curettage material. When clinically indicated, procedures such as examination under anesthesia, cervical biopsy, endometrial biopsy, polypectomy, or dilatation and curettage were performed.

Data Analysis

Descriptive statistics were used to summarize the demographic and clinical characteristics of the study population. The frequency and distribution of various histopathological findings were calculated. Data analysis was performed using SPSS ver 20.0.

Results

The study included 100 women with an estimated mean age of 51.7±5.7 years.

Table 1: Sociodemographic profile

Age Group (years)	Number	%age
Less than or equal to 45	01	1.0%
46-50	45	45.0%

51-55	34	34.0%
56-60	11	11.0%
>60 years	9	9.0%
Socioeconomic status		
Upper Class	18	18.0%
Middle Class	56	56.0%
Lower class	26	26.0%
Residence		
Urban	60	60.0%
Rural	40	40.0%
Parity		
Nullipara	6	6.0%
Para 1-3	58	58.0%
Para>3	36	36.0%
BMI		
Normal	60	60.0%
Overweight	10	30.0%
Obese	30	10.0%

Table 1 depicts the sociodemographic profile of study participants. In our study, the majority of the women presenting with post-menopausal bleeding fall into the 46–50 age group (45%), followed by those in the 51–55 age group (34%), 56-60 years groups had (11.0%) participants with minimum participants (1.0%) in less than or equal to 45 years age group. This suggests that the majority of cases occur in women in the early years of post-menopause.

In our study, the distribution by socioeconomic status shows that a large proportion of the patients (56%) come from the middle class, with 26% from the lower class and 18% belonging to the upper class. This may reflect the demographic characteristics of the hospital's catchment area, where middle-class women are more represented among those seeking tertiary care.

Further, a higher percentage of women (60%) are from urban areas compared to rural regions (40%). This might indicate better accessibility to tertiary care facilities in urban settings, or it might also reflect differences in health-seeking behavior and awareness between urban and rural populations.

In addition, most of the women are multiparous, with 58% classified as para 1–3 and 36% as having more than three children. Only a small percentage (6%) are nulliparous. These figures underline that the majority of the patients have had children, which may be relevant when considering hormonal and structural changes in the endometrium. Regarding body mass index, 60% of women have a normal BMI, although 30% were obese and 10% fall into the overweight category.

Table 2: Duration of Menopause

Duration of menopause (in years)	Number	%age
1-3 years	48	48.0%
4-6 years	22	22.0%
7-9 years	12	12.0%
10 and above	18	18.0%

Table-2 depicts the duration of menopause (in years) among the study participants. The majority of women with post-menopausal bleeding (48%) are in the early stages of menopause (1–3 years), followed by 22% in the 4–6 years range. This suggests that post-menopausal bleeding is more common in the initial years after menopause, potentially due to residual hormonal activity or early pathological changes. A smaller proportion of women (12%) are in the 7–9 years range, while 18% have been menopausal for 10 years or more.

Table 3: Associated comorbidities with PMB

Comorbidity	Number	%age
Diabetes	22	22.0%
Hypertension	12	12.0%
Obesity	30	30.0%
Thyroid disorder	16	16.0%
None	20	20.0%

Table-3 depicts the associated comorbidities with PMB among study participants. It was observed that Obesity was the most common comorbidity (30%) among women with post-menopausal bleeding, highlighting its potential role as a risk factor for endometrial pathology. Further, Diabetes (22%) and thyroid disorders (16%) are also significant comorbidities, which may contribute to hormonal imbalances or metabolic changes affecting the endometrium. Moreover, Hypertension is present in 12% of the cases, while 20% of women report no comorbidities, suggesting that a subset of patients may experience post-menopausal bleeding without any underlying systemic conditions.

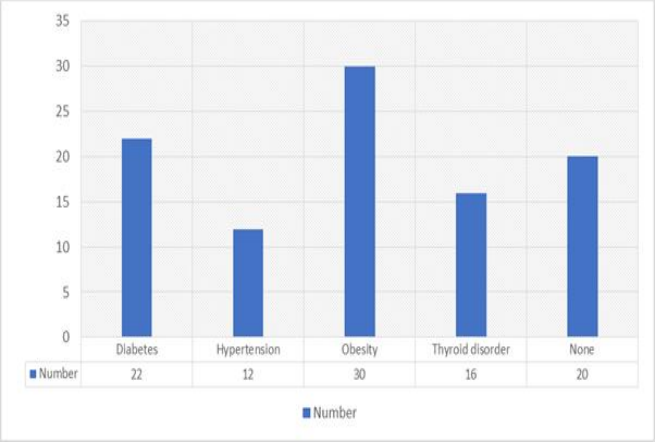

Figure 1: Associated comorbidities with PMB

Table 4: Histopathological findings in post-menopausal bleeding women

Histopathological findings	Number	%age
Endometrial Atrophy	40	40.0%
Proliferative Endometrium	25	25.0%
Disordered proliferative Endometrium	10	10.0%
Endometrial carcinoma	5	5.0%
Secretory Endometrium	8	8.0%
Endometrial Polyp	6	6.0%
Endometrial Hyperplasia with Atypia	6	6.0%

Table 4 depicts histopathological findings in post-menopausal bleeding women. In our study, Endometrial Atrophy (40.0%) was the most common finding. Its high prevalence suggests that atrophic endometrium is a common cause of post-menopausal bleeding, likely due to hypoestrogenic states. Further, a significant proportion of patients (25.0%) have a proliferative phase endometrium. This may be influenced by unopposed estrogen or the early post-menopausal hormonal rebound, leading to thickened endometrium. Disordered Proliferative Endometrium was observed among 10.0% of patients. This pattern reflects a spectrum between normal proliferative and hyperplastic changes. It may indicate early alterations that need monitoring. Secretory Endometrium was observed in 8.0% of patients, and Endometrial Polyp and Hyperplasia with Atypia was observed among 6.0% of the patients each. Endometrial Carcinoma was detected in a smaller group of 5.0%.

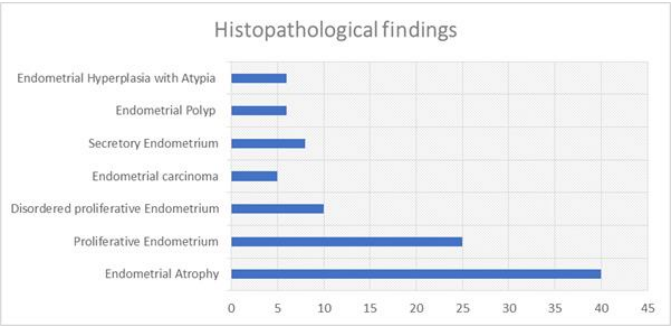

Figure 2: Histopathological findings

Discussion

Postmenopausal bleeding is a common health concern, requiring prompt attention and diagnostic work-up to identify the underlying etiology. In our study, we have analyzed the sociodemographic profile, associated comorbidities, and histopathological patterns in 100 women presenting with postmenopausal bleeding.

The mean age of the study population was approximately 51.7 years, consistent with the finding that post-menopausal bleeding is more common in the early post-menopausal years. This is consistent with other studies conducted by Damle et al., 2013; Reyaz & Nandi, 2023 that have reported the highest incidence of post-menopausal bleeding in the first few years after menopause [6,7].

Most participants were in the 46-50 and 51-55 age groups, which is consistent with the typical onset of post-menopausal bleeding reported by Agrawal et al., 2018 and Gredmark et al., 1995 in similar studies [8,9]. The predominance of cases in the early post-menopausal period might correlate with a higher detection rate of endometrial changes before they progress to more advanced diseases.

The sociodemographic profile reveals that most women with post-menopausal bleeding belong to the middle socioeconomic class and reside in urban areas. This may

reflect better access to tertiary healthcare facilities in urban settings and the healthcare-seeking behavior of the urban population. In similar studies of post-menopausal bleeding by Brandner & Neis, 2000 and Talwar et al., 2024, a significant proportion of women from urban and middle-class backgrounds present with atypical hyperplasia or early endometrial carcinoma, which underscores the importance of early diagnosis in these demographic groups [10,11].

Regarding parity, the predominance of multiparous women aligns with previous studies indicating that higher parity may be a risk factor for postmenopausal bleeding, likely due to structural and hormonal changes in the endometrium. Additionally, obesity emerged as a significant comorbidity, underscoring its potential role in the pathogenesis of endometrial abnormalities. The findings are consistent with similar studies conducted by Agrawal et al., 2018, Procopé 1971, Izetbegović et al., 2013 and Rekha & Rani, 2016 [2,8,12,13].

In our study, the most common histopathological finding was endometrial atrophy as also reported by Bindroo et al., 2018 and Paul et al., 2024 [1,14]. This suggests that most post-menopausal bleeding episodes are benign and related to hypoestrogenic states, which is consistent with the findings of previous studies [9,2]. However, a notable proportion of women also presented with proliferative endometrium, disordered proliferative endometrium, and endometrial hyperplasia. These patterns indicate a spectrum of hormonal imbalance and premalignant changes that require close monitoring and appropriate management.

The study also found that 5% of the participants had endometrial carcinoma, which is consistent with the 10-30% range reported in the literature [13].

Overall, the spectrum of histopathological findings ranges from benign atrophic changes to conditions with malignant potential. This diversity underscores the importance of careful histological examination in patients with post-menopausal bleeding to ensure appropriate follow-up and treatment.

Conclusion

In conclusion, our study highlights the importance of a comprehensive clinical and histopathological evaluation of post-menopausal bleeding. The high prevalence of benign conditions, such as endometrial atrophy, along with the detection of premalignant and malignant lesions, underscores the need for a thorough diagnostic workup in all women presenting with postmenopausal bleeding. Prompt investigation and early intervention can lead to better outcomes and improved quality of life for post-menopausal women.

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