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E-mail: docritikkashwani@yahoo.com
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Socio-demographic profile of women presenting with postmenopausal bleeding in a tertiary care hospital

Farah Noor[1], Rowson Ara[1,*], Salma Akter Munmun[1], Anjumun Ara[1], Kazi Farhana Begum[1], Nigar Sultana[1], A. M Shahinoor[2]

[1]Department of Obstetrics and Gynecology, Bangladesh Medical University (BMU), Dhaka, Bangladesh, [2]Department of Padriatic Surgery, Bangladesh Medical University (BMU), Dhaka, Bangladesh, *Corresponding author

Affiliation URL:
https://obstetricsgynecology.bmu.ac.bd/
https://paediatricsurgery.bmu.ac.bd/

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Author contact:
Farah Noor - E-mail: farahnoor.70@bmu.ac.bd
Rowson Ara - E-mail: rowsonara1664@gmail.com
Salma Akter Munmun - E-mail: salma.a.munmun@gmail.com
Anjumun Ara - E-mail: anjumunara@gmail.com
Kazi Farhana Begum - E-mail: farhanakazi04@bmu.ac.bd
Nigar Sultana - E-mail: nigarsultana@bmu.ac.bd
A.M Shahinoor - E-mail: shahinoor_m25@yahoo.com

Abstract:
Postmenopausal bleeding requires prompt evaluation because of its association with endometrial pathology. A cross-sectional study of 150 women with postmenopausal bleeding was conducted at Bangladesh Medical University, Dhaka, from June 2024 to July 2025. The mean age was 53.8 ± 6.2 years and 88.0% of women had an endometrial thickness >5 mm on ultrasonography. Benign lesions were found in 83.3% of cases, while premalignant and malignant lesions accounted for 6.7% and 10.0%, respectively, with hypertension and diabetes as common comorbidities. Thus, routine ultrasonography and histopathology facilitate early detection and appropriate management of significant endometrial pathology.

Keywords: Postmenopausal bleeding, endometrial biopsy, transvaginal ultrasonography

Background:
Postmenopausal bleeding is a frequent gynecological symptom requiring urgent evaluation due to its potential association with significant pathology, particularly endometrial carcinoma, with malignancy rates reported between 5% and 15% among affected women, underlining the importance of systematic assessment **[1].** Physiological hypoestrogenism post-menopause causes endometrial atrophy, the most common benign source of bleeding; other causes include polyps, hyperplasia, fibroids and cervical issues, though distinguishing benign from premalignant or malignant lesions based only on clinical presentation remains challenging, warranting structured diagnostic protocols **[2].** Therefore, structured diagnostic approaches are essential to ensure early detection and timely management. Transvaginal ultrasonography has become the first-line investigative tool for evaluating postmenopausal bleeding. Endometrial thickness measurement provides a noninvasive method to stratify risk, with a cutoff value of 5 mm widely accepted to exclude significant pathology. Studies have showed a strong correlation between increased endometrial thickness and abnormal histopathological findings **[3].** Nevertheless, imaging alone cannot establish a definitive diagnosis and histopathological evaluation remains the gold standard **[4].** Endometrial biopsy allows direct tissue assessment and is critical for identifying hyperplasia and carcinoma. Several clinicopathological studies have highlighted variability in histological patterns across different populations, influenced by demographic factors, reproductive history and comorbid conditions such as diabetes, hypertension and obesity **[5].** These factors have been shown to increase the risk of endometrial pathology, particularly malignancy **[6].** In developing countries, factors such as delayed healthcare engagement, limited specialized services and low awareness exacerbate disease burden. Socio-demographic profiling aids in identifying population-specific risk factors and health system gaps, which is particularly relevant given limited data from tertiary centers in countries like Bangladesh **[7].** This integration of socio-demographic, imaging and histopathological data is crucial for improving early diagnosis, risk stratification and management decisions in resource-limited settings **[8].** Therefore, it is of interest to report the socio-demographic characteristics, menopausal profile, imaging findings and histopathological outcomes of women presenting with postmenopausal bleeding in a tertiary care hospital.

Materials and Methods:
This cross-sectional observational study was conducted in the Department of Obstetrics and Gynecology, Bangladesh Medical University, Dhaka, Bangladesh. The study period extended from June 2024 to July 2025. A total of 150 women presenting with postmenopausal bleeding were enrolled consecutively.

Selection criteria:
Inclusion criteria:
[1] Women aged ≥45 years.
[2] History of natural menopause for at least 12 months.
[3] Presentation with bleeding per vaginum after menopause.

Exclusion criteria:
[1] Women receiving hormone replacement therapy.
[2] Bleeding due to obvious vulvovaginal trauma or infection.
[3] Known coagulation disorders.
[4] Incomplete clinical or investigative data.

Data collection procedure:
Data were collected using a structured data-collection sheet. Socio-demographic variables included age, residence, education and socio-economic status. Detailed reproductive history, parity, age at menopause, duration since menopause and time interval between the onset of bleeding and hospital presentation were recorded through face-to-face interviews. All participants underwent thorough clinical examinations. Transvaginal ultrasonography was performed using a standardized protocol

to assess endometrial thickness and identify uterine pathology. Endometrial thickness was measured in the sagittal plane at its thickest point. Women with abnormal findings or persistent bleeding underwent endometrial sampling using a pipelle or dilatation and curettage, as clinically indicated. Histopathological examination was performed by experienced pathologists using hematoxylin and eosin (H&E) staining. Medical comorbidities were documented in the patient records and clinical evaluations. Patient information confidentiality was maintained throughout the study.

Statistical analysis:
Data were analyzed using SPSS version 25.0. Descriptive statistics were used to summarize variables. Categorical data were expressed as frequencies and percentages. Continuous variables were presented as mean and standard deviation.

Results:
Table 1 presents the sociodemographic characteristics of the study population. Most women were aged 50–54 years (40.0%), followed by 55–59 years (23.3%). The mean age was 53.8 ± 6.2 years. Middle socioeconomic status was most frequent (40.0%). Urban residents constituted 60.0% of participants. Primary and secondary education accounted for 33.3% and 30.0%, respectively. **Table 2** describes the parity distribution of the patients. Parity of three was most common (33.3%), followed by parity two (30.0%). Grand multiparity (≥5) and low parity (0–1) each accounted for 10.0%. **Table 3** outlines menopausal characteristics and medical comorbidities. Most women attained menopause between 50 and 54 years (40.0%). Duration since menopause exceeded six years in 33.3% of cases. Nearly half presented within 1–6 months of bleeding onset (46.7%). Comorbidities were present in 60.0%, with hypertension being the most common (20.0%). **Table 4** summarizes ultrasonographic and endometrial findings. Endometrial thickness greater than 5 mm was observed in 88.0% of women. Atrophy (26.7%) was the most frequent ultrasound finding. Polyps (20.0%) and hyperplasia (16.7%) were also identified. **Table 5** presents histopathological diagnoses of endometrial biopsies. Benign lesions comprised 83.3% of cases. Premalignant lesions accounted for 6.7%. Malignancy was detected in 10.0% of women.

Table 1: Socio-demographic characteristics of study population (n = 150)

Characteristic	Category	Frequency (n)	Percentage (%)
Age group (years)	45–49	25	16.7
	50–54	60	40
	55–59	35	23.3
	60–64	20	13.3
	≥65	10	6.7
	Mean age ± SD	53.8 ± 6.2	
Socioeconomic status	Upper class	10	6.7
	Upper middle	35	23.3
	Middle	60	40
	Lower middle	30	20
	Lower class	15	10
Residence	Urban	90	60
	Rural	60	40
Education level	Illiterate	30	20
	Primary	50	33.3
	Secondary	45	30
	Higher	25	16.7

Table 2: Distribution of parity of the patients

Parity	Frequency (n)	Percentage (%)
0–1	15	10
2	45	30
3	50	33.3
4	25	16.7
≥5	15	10

Table 3: Menopausal history & medical comorbidities (n = 150)

Parameter	Category	Frequency (n)	Percentage (%)
Age at menopause (years)	<40	5	3.3
	40–44	15	10
	45–49	40	26.7
	50–54	60	40
	≥55	30	20
Duration since menopause	<3 years	55	36.7
	3–6 years	45	30
	>6 years	50	33.3
Time to presentation after bleeding onset	<1 month	30	20
	1–6 months	70	46.7
	>6 months	50	33.3
Comorbidities	None	60	40
	Hypertension	30	20
	Diabetes Mellitus	20	13.3
	HTN + DM	25	16.7
	Obesity (BMI ≥30)	15	10

Table 4: Ultrasonography & endometrial findings (n = 150)

Finding	Category	Frequency (n)	Percentage (%)
Endometrial thickness (TVS)	≤5 mm	18	12
	>5 mm	132	88
Ultrasound suggested pathology	Polyp	30	20
	Fibroid	20	13.3
	Atrophy	40	26.7
	Hyperplasia	25	16.7
	Normal	35	23.3

Table 5: Histopathological categories of endometrial biopsies (n = 150)

Histopathological Diagnosis	Frequency (n)	Percentage (%)
Benign findings	125	83.3
Premalignant lesions	10	6.7
Malignant lesions	15	10
Total	150	100

Discussion:
The mean age of women was 53.8 years, with most presenting during the early postmenopausal period, consistent with Paul *et al.* (2020) **[9]**, who reported a similar age distribution among

women with postmenopausal bleeding. Most participants had an endometrial thickness >5 mm, comparable to the findings of Saccardi *et al.* (2022) **[10]**, who showed a strong association between increased endometrial thickness and abnormal histopathological outcomes. Benign lesions predominated (83.3%), whereas premalignant and malignant lesions accounted for 6.7% and 10.0%, respectively. These findings agree with Sebastian *et al.* (2021) **[11]**, who reported malignancy rates of approximately 8–12% in women with postmenopausal bleeding. Hypertension and diabetes mellitus were the most common comorbidities, similar to observations by Talwar *et al.* (2024) **[12]**, supporting their association with endometrial pathology. The predominance of atrophic and other benign endometrial changes is comparable to the findings of Xue *et al.* (2022) **[13]**, who identified benign endometrial lesions as the leading cause of postmenopausal bleeding. Overall, the present findings are consistent with previous evidence and reinforce the importance of combining transvaginal ultrasonography with histopathological examination for the early diagnosis of significant endometrial disease.

Conclusion:

Postmenopausal bleeding is a critical clinical symptom with diverse etiologies ranging from benign conditions to malignancies. This study shows that most women present in the early postmenopausal period, with benign histopathology predominating, although a significant proportion harbour premalignant and malignant lesions. Systematic evaluation using transvaginal ultrasonography and endometrial biopsy enables an accurate diagnosis. Early recognition and prompt investigation are essential for optimizing the clinical outcomes.

Conflicts of interest: There are no conflicts of interest.

Ethical approval: The study was approved by the Institutional Ethics Committee.

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