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Post-Menopausal Bleeding: A Study of 120 Women in a Tertiary Care Hospital in Dhaka

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Abstract
***Background:** Postmenopausal bleeding (PMB) is a common clinical issue with potential underlying causes ranging from benign to malignant conditions, including endometrial cancer. Early identification and management are crucial for improving outcomes.*
***Aim of the study:** To evaluate the clinical characteristics, associated medical conditions, and histopathological findings in women presenting with PMB in a tertiary care hospital.*
***Methods:** This prospective observational study was conducted over one year at Department of Obstetrics and Gynaecology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh. It included 120 postmenopausal women aged ≥41 years presenting with vaginal bleeding. Comprehensive clinical evaluations, transvaginal ultrasonography, and histopathological analyses were performed. Statistical analyses were conducted using SPSS software (version 26).*
***Result:** The mean age of menopause was 48.67 ± 4.14 years, and PMB occurred most frequently between 51–60 years (54.17%). Hypertension (21.67%) and diabetes (19.17%) were the most common comorbidities. Endometrial thickness >4 mm was noted in 78.33% of participants. Benign causes predominated (74.17%), with proliferative endometrium (24.17%) being the most common. Malignant causes were observed in 25.83%, with cervical carcinoma (17.50%) being the leading malignancy.*
***Conclusion:** PMB is frequently associated with benign conditions, but malignancies, particularly cervical cancer, remain significant. Comprehensive evaluations, including histopathological analysis and endometrial thickness assessment, are essential for distinguishing benign from malignant etiologies and guiding timely management.*
***Keywords:** Postmenopausal bleeding, endometrial thickness, histopathology.*

I. INTRODUCTION

Postmenopausal bleeding (PMB), defined as uterine bleeding occurring at least one year after the cessation of menstrual periods, represents a common clinical issue encountered in both general and hospital settings [1,2]. PMB can have several underlying causes, ranging from benign conditions to more serious pathologies, including endometrial cancer. The prevalence of endometrial cancer among women presenting with PMB varies across studies, with estimates typically ranging from 3% to 10% [3,4]. One study found a prevalence of for endometrial cancer among women presenting with PMB for the first time. Since up to 95% of women with endometrial cancer report PMB as their primary or sole symptom, thorough investigation to exclude malignancy is crucial [4]. Furthermore, endometrial cancer remains the most common gynecological malignancy in developed countries, and it often presents at an early stage when treatment options, including curative surgery, are most effective [5]. In the United States, Japan, and the European Union, over 166 million women are postmenopausal, many of whom experience PMB due to hormonal changes, particularly declines in estrogen levels [6]. These hormonal shifts contribute to a range of symptoms, including vaginal atrophy, which frequently presents with PMB [7,8]. The increased life expectancy in these regions has emphasized the need for effective PMB management, as an aging population leads to more cases requiring prompt assessment for malignancy and other serious underlying conditions. Several guidelines have been developed to streamline the evaluation of PMB and mitigate delays in cancer diagnosis. In the United Kingdom, both the Department of Health and the National Institute for Health and Clinical Excellence (NICE) have issued referral guidelines recommending urgent assessment for women with PMB who are not on HRT, those who continue to bleed six weeks post-HRT cessation, and women receiving tamoxifen therapy [9]. To assess PMB, transvaginal ultrasonography (TVUSG) is widely

regarded as a first-line diagnostic tool due to its non-invasive nature, ease of use, and ability to accurately measure endometrial thickness, which is a key factor in malignancy risk assessment. TVUSG can detect endometrial abnormalities with high sensitivity, particularly when endometrial thickness exceeds 5 mm, which significantly correlates with pathology in about 80% of cases. Further diagnostic options include saline infusion sonohysterography (SIS) and endometrial biopsies, which can be performed using hysteroscopy or pipelle techniques. While hysteroscopy allows for direct visualization and targeted biopsies, blind procedures like curettage may miss focal lesions, highlighting the importance of choosing the most appropriate method for each patient [10,11]. In addition to diagnostic accuracy, patient comfort and accessibility are essential in PMB evaluations. SIS, for instance, offers a high diagnostic sensitivity for TVUSG findings and can be performed in outpatient settings, minimizing patient discomfort and costs associated with more invasive procedures. Through these efforts, diagnostic strategies for PMB continue to evolve, with an increasing focus on minimizing invasiveness without compromising efficacy or accuracy [12].The aim of this study is to assess the clinical characteristics, associated medical conditions, and histopathological findings in postmenopausal women presenting with bleeding.

II. METHODOLOGY & MATERIALS

This prospective observational study was carried out in the Department of Obstetrics and Gynaecology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh., targeting female patients over the age of 40 presenting with postmenopausal bleeding. Conducted over a one-year period from January 2017 to December 2017, the study included 120 participants who met the specified inclusion criteria and provided informed consent.

- **Inclusion Criteria:**

The study included all postmenopausal women reporting episodes of vaginal bleeding.

- **Exclusion Criteria:**

Women were excluded if they were under 41 years of age, had bleeding disorders, hematological conditions, were undergoing anticoagulant therapy, experienced premature menopause due to natural causes, surgery, radiation, or chemotherapy, were on hormone replacement therapy, or had injuries to the genital tract.

Participants underwent comprehensive evaluations for any coexisting medical conditions, along with thorough abdominal and local examinations. Speculum examinations were performed, and if the cervix appeared normal, additional procedures such as Pap smears were conducted. Abdominal and transvaginal ultrasounds were performed for all cases to assess uterine abnormalities, measure the endometrial thickness and its uniformity, and evaluate the endometrial-myometrial interface. Cervical biopsies were collected if abnormalities were observed, while endometrial sampling using a pipelle aspirator was conducted for patients with endometrial thickness exceeding 4 mm. In cases where malignancy was suspected, fractional curettage and hysteroscopic biopsy were performed. Body mass index (BMI) was classified based on WHO guidelines, with overweight defined as a BMI of 25.0–29.9 kg/m² and obesity as a BMI of 30 kg/m² or higher [13]. All participants received detailed information about the study's objectives and procedures and informed written consent was obtained. Data privacy was maintained according to institutional standards, and the study received approval from the institutional review board.

Statistical analysis

Data were compiled into well-structured tables and figures for clear interpretation. Statistical analyses were carried out using SPSS software (version 26) on a Windows platform. Continuous variables were expressed as mean±SD, while categorical variables were summarized as frequencies and percentages.

III. RESULT

A total of 120 participants were included in this study. The majority experienced menopause between the ages of 46-50 years (48.33%), followed by those who experienced menopause after the age of 50 (34.17%). Only 17.5% entered menopause between the ages of 41-45 years. The mean age at menopause was 48.67± 4.14 years. Regarding postmenopausal bleeding, 54.17% experienced bleeding between 51-60 years, 27.5% after 60, and 18.33% between 46-50 years. Most participants (58.33%) had more than two children, while 28.33% had 1-2 children, and 13.33% had no children (Table 1). Figure 1 showed that hypertension was the most common condition, affecting 21.67% of participants, followed by diabetes mellitus at 19.17%. Overweight individuals accounted for 15.83%, and obesity was noted in 6.67%. Hypothyroidism was the least prevalent, affecting 5% of participants. Table 2 showed that 78.33% of participants had an endometrial thickness greater than 4 mm, while 21.67% had a thickness below 4 mm. In terms of uterine abnormalities, a bicornuate uterus was observed in

28.33% of participants, followed by hematometra in 25% and pyometra in 20.83%. No adnexal masses were detected in any of the participants. Uterine size assessment showed that 59.17% had a normal-sized uterus, 23.33% had an atrophic uterus, and 17.5% had an enlarged uterus. Scanty curettings were observed in 45.83%, moderate curettings in 28.33%, and copious curettings in 25.83% 9 (Figure 2). The majority of participants were diagnosed with benign conditions (74.17%), while malignant diagnoses were observed in 25.83% (Figure 3). Among the 89 participants with benign causes of postmenopausal bleeding, proliferative changes were the most common (24.17%), followed by atrophic changes (14.17%). Other causes included cystoglandular hyperplasia (10%), endometrial hyperplasia (9.17%), endometritis (6.67%), fibroids (5.83%), and endometrial polyps (4.17%) (Table 3). Among the 31 participants with malignant causes of postmenopausal bleeding, carcinoma of the cervix was the most common (17.5%), followed by atypical endometrium (4.17%), adenocarcinoma (3.33%), and ovarian cancer (0.83%) (Table 4).

Table 1: Baseline demographic profile of study participants (N=120).

Variables	Frequency (n)	Percentage (%)
Age at menopause (years)		
41-45	21	17.50
46-50	58	48.33
>50	41	34.17
Mean±SD	48.67±4.14	
Age of postmenopausal bleeding (years)		
46-50	22	18.33
51-60	65	54.17
>60	33	27.50
Mean±SD	57.27±6.41	
Parity		
0	16	13.33
1-2	34	28.33
>2	70	58.33

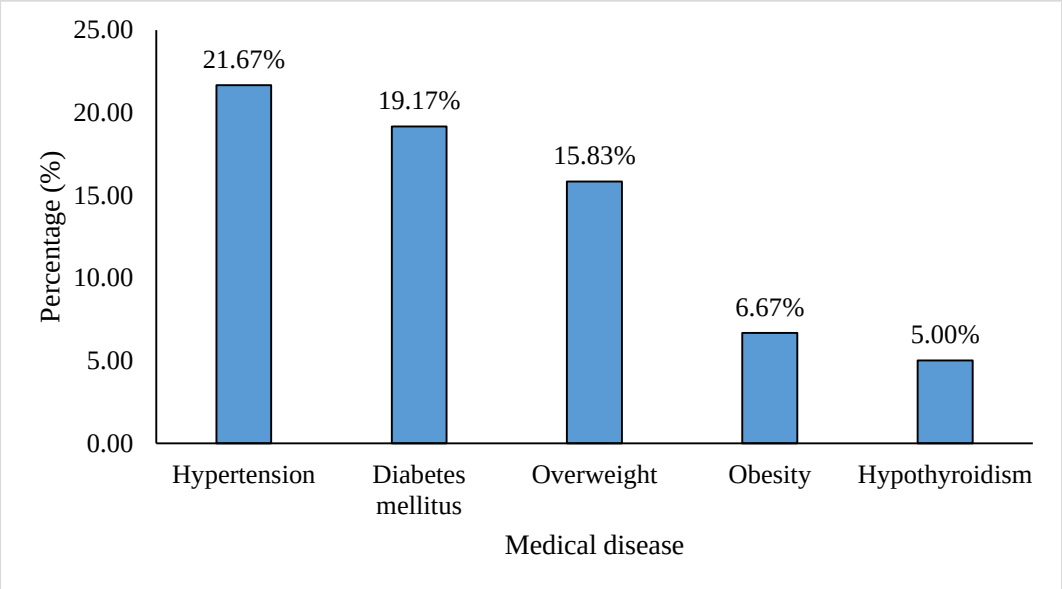

Figure 1: Prevalence of medical conditions among study participants (N=120).

Table 2: Pelvic ultrasound assessment results among study participants (N=120).

Variables	Frequency (n)	Percentage (%)
Endometrial thickness		
Endometrial Thickness (>4 mm)	94	78.33
Endometrial Thickness (<4 mm)	26	21.67
Uterus abnormalities		
Bicorunate uterus	34	28.33
Hematometra	30	25.00
Pyometra	25	20.83
Adenexal mass	0	0.00
Uterine size		

Normal uterus	71	59.17
Atropic uterus	28	23.33
Enlarged uterus	21	17.50

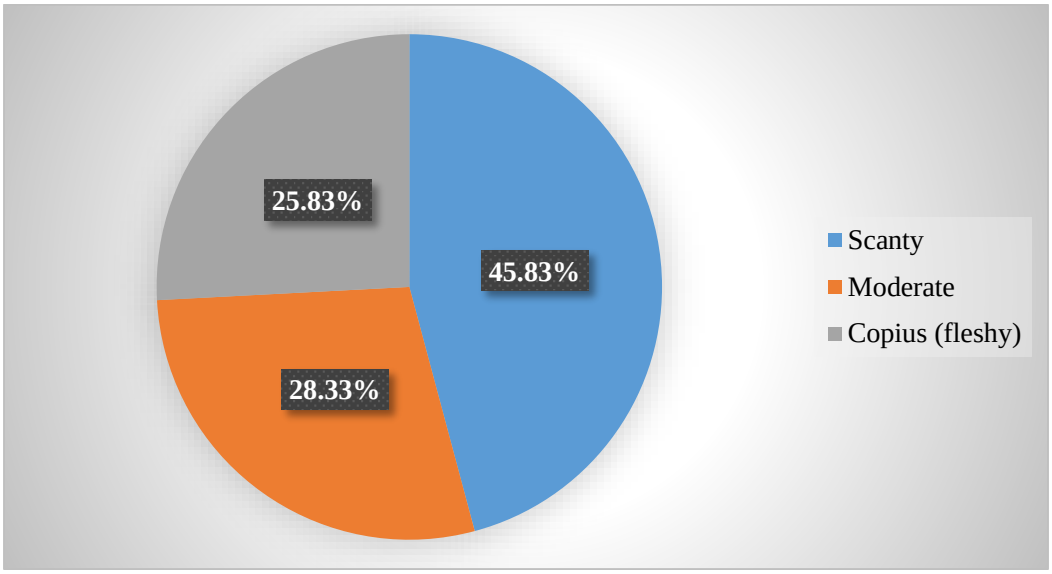

Figure 2: Distribution of uterine curettings among study participants (N=120).

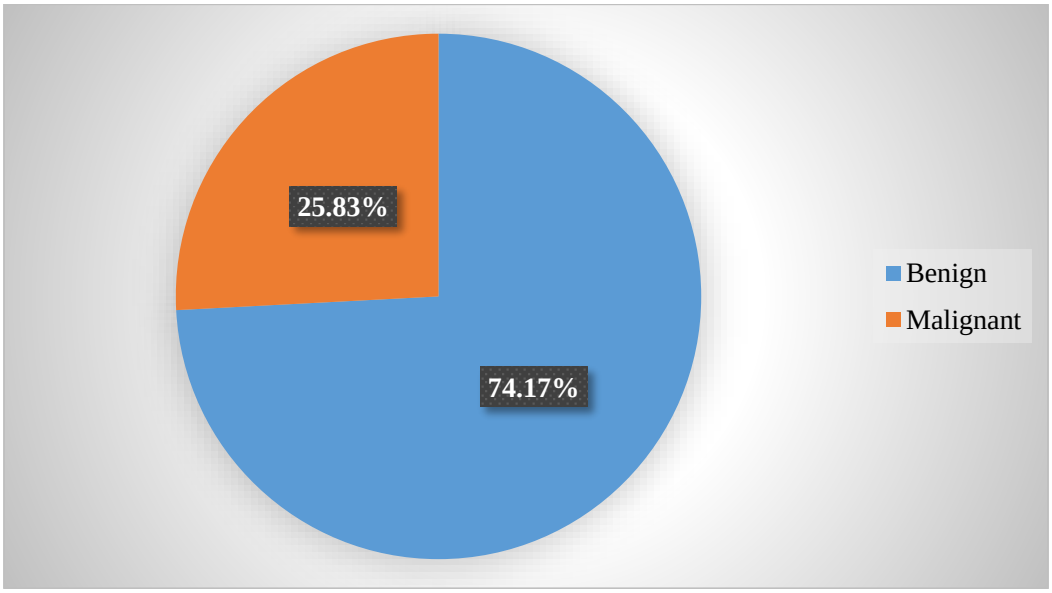

Figure 3: Comprehensive histopathological diagnoses among study participants (N=120).

Table 3: Distribution of study participants based on benign causes of postmenopausal bleeding (N=89).

Causes	Frequency (n)	Percentage (%)
Proliferative	29	24.17
Atrophic	17	14.17
Cystoglandular hyperplasia	12	10.00
Endometrial hyperplasia	11	9.17
Endometritis	8	6.67
Fibroids	7	5.83
Endometrial polyp	5	4.17

Table 4: Classification of study participants based on malignant etiologies of postmenopausal bleeding (N=31).

Causes	Frequency (n)	Percentage (%)
Carcinoma cervix	21	17.50
Atypical endometrium	5	4.17
Adenocarcinoma	4	3.33

Ovarian cancer	1	0.83

IV. DISCUSSION

Postmenopausal bleeding (PMB) is characterized as any bleeding originating from the female genital tract in women of postmenopausal age, occurring at least six months after the cessation of menstruation in those not on hormonal therapy or as irregular vaginal bleeding in postmenopausal women using hormonal therapy [14]. It is predominantly observed within 5 to 10 years following menopause, with the typical age of presentation ranging between 50 and 60 years [15]. In this study, the age of menopause was most frequently observed in the 46–50-year age range, accounting for 48.33% of cases, with an average age of menopause calculated as 48.67 ± 4.14 years. Comparable findings were reported by Lavanya et al. (2016) and Kothapally and Bhashyakarla (2013), who noted the highest incidence of menopause in the 45–50-year age group [15,16]. In the present study, the majority of PMB cases (54.17%) occurred in women aged 51–60 years, while only 18.33% of cases were noted in the 46–50-year age group. The mean age at presentation was 57.27 ± 6.41 years. Similarly, Lidor et al. (1986) documented that the age range of PMB patients was 40–81 years, with a mean age of 56 years [14]. Ubeja and Singh (2017) reported a narrower age range of 46–50 years, with an average of 54.51 years [17]. Among the studied patients, hypertension emerged as the most prevalent comorbid medical condition, followed by diabetes mellitus and overweight status. Lavanya et al. (2016) also observed that overweight is the most common comorbidity among PMB patients, followed by hypertension and diabetes mellitus [15]. Pelvic ultrasonography (USG) revealed endometrial thickness greater than 4 mm in the majority of cases, with no adnexal masses identified. Similar findings were highlighted by Kothapally and Bhashyakarla (2013) [16]. Fractional curettage findings indicated scanty cuttings in many cases despite the presence of thick endometrium, potentially attributable to endometrial polyps, which are often not amenable to blind curettage. This observation aligns with the findings of Kothapally and Bhashyakarla (2013) [16]. Histopathological evaluation in this study revealed a predominance of benign etiologies, consistent with the observations [15]. Proliferative endometrium was the most frequent histological pattern (24.17%), followed by atrophic endometrium (14.17%), cystoglandular hyperplasia (10.00%), and endometrial hyperplasia (9.17%). Malignant causes included cervical carcinoma in 17.50% of cases and atypical endometrium in 4.17%. In a U.S. study of postmenopausal women with bleeding, final diagnoses included cervical cancer in 6.6% of cases, atypical hyperplasia in 0.2%, hyperplasia without atypia in 2%, polyps in 37.7%, fibroids in 6.2%, proliferative/secretory endometrium in 14.5%, and atrophic or hypertrophic patterns in 30.8% [18]. Rathi et al. (2013) reported that endometrial cancer was the leading malignancy associated with PMB [19]. High circulating estrogen levels have been implicated as a precursor to endometrial hyperplasia, a condition identified in 5–10% of PMB cases. The hyperestrogenic state may result from obesity, exogenous estrogen use, or estrogen-secreting ovarian tumors. Clinically significant hyperplasia often arises in a functional endometrium subjected to prolonged estrogen exposure without progesterone, a well-established risk factor for the development of endometrial cancer [15]. This study has several limitations. The one-year study duration may have constrained the observation of seasonal or long-term trends. Exclusion criteria, such as the omission of women with premature menopause, those on hormone replacement therapy, or with genital tract injuries, could have left out significant subgroups of interest.

V. CONCLUSION

This study highlights the significant clinical and pathological characteristics of postmenopausal bleeding among women. Most cases occurred between the ages of 51–60, with hypertension and diabetes being prevalent comorbidities. The findings emphasize the importance of assessing endometrial thickness, as most participants had values exceeding 4 mm. Benign conditions, particularly proliferative endometrium, were the most common causes, while cervical carcinoma was the predominant malignancy. These results underscore the need for vigilant evaluation and timely intervention in postmenopausal bleeding to distinguish benign from malignant etiologies and improve patient outcomes.

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