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Abnormal Uterine Bleeding in Women<40 Years and Its Risk Factors

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Abstract **Original Research Article**

Background: Abnormal uterine bleeding (AUB) is a common cause for outpatient and emergency department visits in reproductive-aged women and may have a significant impact on quality of life. ***Objective:*** The study aimed to determine the clinical risk factors for abnormal uterine bleeding in women <40 years age. ***Methods:*** This was a cross-sectional study conducted in the Obstetric & gynae department in Khwaja Yunus Ali medical college and hospital from January 2021 to December 2021. Clinical information was retrieved retrospectively from the patients' medical records. ***Results:*** 120 women of reproductive age with abnormal uterine bleeding participated in the study. Most of them were in the 36-40 age group. The patients' average age was 34.28 years. 88 (73.33%) had a large uterus, and 86 (70%) had atypical menstruation histories. Clinical symptoms included 35 (29.17%) heavy periods, 28 (23.33%) metrorrhagia, 22 (18.33%) polymenorrhea, 17 (14.17%) oligomenorrhea, 6 (5%) amenorrhea, and 12 (10%) reported symptoms of intermenstrual bleeding. After reviewing the medical records, it was discovered that 33 (27.5%) had diabetes, 37 (30.83%) had hypertension, 16 (13.33%) had both diabetes and hypertension, 7(5.63%) had hypothyroidism, 5 (4.17%) had cancer, 19(15.83%) were obese, and the majority of the patients, 87 (72.5%) were anemic. Multiple pregnancy was also a significant factors for AUB. ***Conclusion:*** AUB can be caused by factors such as increased age, obesity, nulliparity, irregular menstrual cycles, a history of diabetes, hypertension, and more. The only risk factor in the present study that was statistically significant was irregular menstruation history. Bulky uterus, multiple pregnancies, and irregular menstrual cycles may be related with abnormal uterine bleeding.

Keywords: Abnormal uterine bleeding, menstrual cycle, reproductive age, risk factors.

INTRODUCTION

Abnormal uterine bleeding (AUB) is a typical gynecological symptom of premenopausal women, includes irregularities in menstruation frequency, duration, regularity, and flow volume [1]. The term "abnormal uterine bleeding" refers to any excessive, unpredictable, or irregular bleeding that fails to correspond with the volume, duration, or frequency of blood flow associated with a typical menstrual cycle [2]. Women between menarche and menopause have been reported to experience it in 9–14% of cases [3]. The typical menstrual cycle lasts for 5±2 days, with an average blood loss of 40±20 ml, and occurs at intervals of about 28 days and the cycle's length ranges from 21 to 35 days [4]. Age-related differences in menstrual cycle length should be no more than seven days for women between the ages of 26 and 41 [5]. Abnormal uterine bleeding may be caused by endometrial anatomical alterations, endometrial malignancy, or disruption of normal physiology [6]. Prolonged menstruation is defined as bleeding for longer than 8 days. Volume is more difficult to quantify because women judge whether their periods are heavy, normal, or light. Excessive monthly blood loss that interferes with a woman's physical, social, emotional, or material well-being is referred to as heavy menstrual bleeding [7]. The terms heavy menstrual bleeding (HMB), intermenstrual bleeding, and unplanned bleeding or breakthrough bleeding (BTB) on hormone therapy have supplanted menorrhagia, metrorrhagia, and oligomenorrhea as the most common causes of abnormal bleeding in reproductive-aged women [8]. The causes of abnormal uterine bleeding can be grouped into three categories: iatrogenic causes, systemic diseases, and diseases of the reproductive

tract. Pregnancy problems, cancerous tumors, infections (endometritis, salpingitis), and other benign pelvic disorders are reproductive system diseases that may cause abnormal uterine bleeding [9]. Depending on whether the uterine structure changes, these disorders are divided into two groups. Uterine structural changes fall in one group, and nonstructural modifications fall in another group [10]. Adenomyosis of the myometrium, leiomyoma of the uterus, polyps in the uterus, and the risk of endometrial cancer, which may result in AUB, are the four different types of structural abnormalities of the uterus [11, 12].

Sex steroids, hypothalamic depressants, digitalis, phenytoin, anticoagulants, and intrauterine devices are a few examples of iatrogenic causes of irregular uterine bleeding. Cirrhosis, hypothyroidism, and coagulation abnormalities are examples of systemic illnesses that can result in irregular uterine bleeding [9]. It is frequently recommended that premenopausal women with heavy or irregular menstrual flow get an endometrial sample obtained to rule out endometrial illness. Some authorities advise against endometrial sampling in women under the age of 40 unless they are experiencing irregular vaginal bleeding [13], whereas other writers advice it for all women >35 years or for anyone experiencing irregular bleeding, regardless of age [14, 15].

Although AUB is an increasing concern in Bangladesh and throughout the world, its risk factors have not been thoroughly researched. Therefore, the aim of the current study was to find out the risk factors for AUB in Bangladeshi women.

METHODOLOGY

A cross-sectional descriptive study was conducted on adult patients (over 18 years old) who visited the gynecology and obstetrics department of Khwaja Yunus Ali medical college & hospital for treatment of irregular uterine bleeding. Between January 2021 and December 2021, 165 patients with abnormal uterine bleeding visited the hospital for treatment. However, 45 of them were disqualified because they didn't meet the inclusion requirements. A total of 120 patients under the age of 40 participated in this study. We gathered general patient information, and we examined relevant variables. Clinical information was subsequently retrieved from the patients' medical records. The hospital's ethics committee has approved this study. Informed consent forms were signed by the patients or the patients' relatives as well.

Inclusion criteria: The following requirements apply to inclusion: (i) Individuals between the ages of 18 and 40 who complain of abnormal uterine bleeding (strong monthly flow, irregular or intermenstrual bleeding). (ii) Patients with full clinical information. (3) Endometrial sampling by either Pipelle or curettage or both.

Exclusion criteria: Following were the criteria for exclusion: (i) Pregnant patients with bleeding symptoms. (ii) Patients with significant immune system disorders.

A variety of risk factors for an endometrial hyperplasia or cancer diagnosis have been studied. BMI (body mass index), parity, diabetes, hypertension, menstrual cycle regularity were some of these factors.

RESULTS

The study included 120 reproductive age women who were suffering from abnormal uterine bleeding. The age of the patients studied were categorized into four groups, (18-25yrs), (26-30yrs), (31-35yrs) and (36-40yrs) (Table-1) which shows the age distribution of the patients included in the study. The mean age of patients was (34.28) years. The minimum age was (18) years and the maximum was (40) years according to the inclusion criteria of the study. Most of the patients 106(88.33%) who were suffering from abnormal uterine bleeding were married and 86(70%) had abnormal menstrual history. After analysis of medical history it was found that 33(27.5%) of the patients were suffering from type 2 diabetes mellitus, 37(30.83%) from hypertension, 16(13.33%) from both diabetes and hypertension, 7(5.83%) from hypothyroidism, 5(4.17%) from malignancy, 19(15.83%) from obesity and most of the patients 87(72.5%) were anemic.

Table-1: Socio-demographic profile of women

Variables	Category	Number	Percentage (%)
Age	18-25	8	6.67%
	26-30	31	25.83%
	31-35	36	30%
	36-40	45	37.5%
Marital status	Unmarried	14	11.67%
	Married	106	88.33%
Education	High school or less	62	51.67%
	College or more	58	48.33%
Age at menarche (years)	12 or less	65	54.17%
	13 or more	55	45.83%
Number of pregnancies	0	8	6.67%

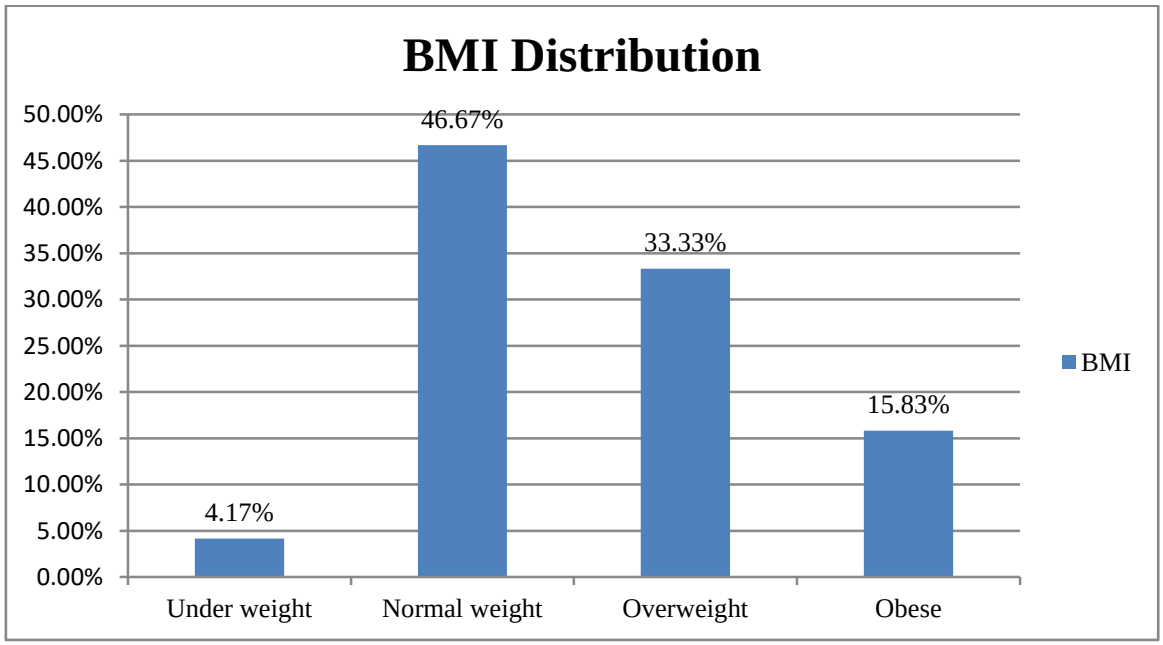
Variables	Category	Number	Percentage (%)
	1-2	33	27.5%
	3-4	42	35%
	≥5	37	30.83%
Menstrual history	Regular	36	30%
	Irregular	84	70%
Medical history	Diabetes	33	27.5%
	Hypertension	37	30.83%
	Both diabetes & hypertension	16	13.33%
	Hypothyroidism	7	5.83%
	Cancer	5	4.17%
	Anemia	87	72.5%
	Obesity	19	15.83%

Table-1 showing the demographic characteristics of the patients participated in the study.

Table-2: Menstrual characteristics of women for abnormal uterine bleeding (n=120)

Bleeding category	Number	Percentage (%)
Heavy periods	35	29.17%
Metrorrhagia	28	23.33%
Polymenorrhea	22	18.33%
Oligomenorrhea	17	14.17%
Amenorrhea	06	5%
Intermenstrual bleeding	12	10%

According to clinical symptoms showing menstrual characteristics of women for abnormal uterine bleeding, 35(29.17%) had heavy periods, 28(23.33%) had metrorrhagia, 22(18.33%) had polymenorrhea, 17(14.17%) had oligomenorrhea, 06(5%) had amenorrhea and 12(10%) had reported intermenstrual bleeding symptoms (Table-2).



Mean ± SD: 27.25±3.04; Range: 18.3-36.2 Kg/m²

Figure-1: Distribution of AUB patients as per BMI Kg/m² (n=120)

Figure 1 shows the BMI measurements in our study group- underweight (≤18.5 Kg/m^2), normal weight (18.5-24.9 Kg/m^2), overweight (25.0-29.9 Kg/m^2), obese (≥30 Kg/m^2). According to BMI, Underweight 5(4.17%), Normal weight 56(46.67%), Overweight 40(33.33%) and Obese 19(15.83%) respectively.

Table-3: Parity of patients presenting with abnormal uterine bleeding (n=120)

Parity	Number	Percentage
Nulliparous	8	6.67%
Low parity (P1-P2)	33	27.5%
Multiparous (P3-P4)	42	35%
Grand Multiparous (> P5)	37	30.83%

Among the women who had abnormal uterine bleeding, 37(30.83%) patients were grand multiparous, 42(35%) were multiparous, 33(27.5%) were of low parity, and 8(6.67 %) were nulliparous (Table 3).

Table-4: Ultrasonographic findings of uterus, endometrium and ovary in AUB patients

Ultrasonographic finding	Category	Number	Percentage
Size of Uterus	Normal	32	26.67%
	Bulky	88	73.33%
Endometrium	Normal	87	72.5%
	Thickening	29	24.17%%
	Thinning	4	3.33%
Ovary	Normal	97	80.83%
	Cystic	23	19.17%

According to ultrasonic findings of the patients, 88(73.33%) had bulky uterus, 29(24.17%) had thickening of endometrium, 4(3.33%) had thinning of endometrium and 23(19.17%) had cystic ovary (Table-4).

Table-5: Results of multiple logistic regression analysis of risk factors for endometrial hyperplasia in women with abnormal uterine bleeding

Risk factor	OR	95%CI
Nulliparity	0.6	0.4, 1.6
Hypertension	1.6	0.5, 4.5
Diabetes	1.4	0.2, 6.2
Obesity	1.6	0.6, 4.4
Irregular Menstruation	15.5	7.2, 38.5

OR - odds ratio; Cl - confidence interval

Table 2 summarizes the findings of a multiple logistic regression analysis of the risk factors. The only risk factor that was determined to be statistically significant was irregular menstruation.

DISCUSSION

This study was carried out among women of reproductive age who visited the Khwaja Yunus Ali medical college & hospital in Sirajgonj with the issue of abnormal uterine bleeding. The term "abnormal uterine bleeding" (AUB) refers to bleeding from the uterine cavity that is either additional to or distinct from typical menstruation, which lasts for around 29 days. If the date moves forward or backwards by a week in this range, the menstrual cycle range extension for 21–35 days, is a common occurrence. Individual constitution determines the length of menstruation, which typically lasts between 3 and 7 days. Normal menstrual bleeding is between 5 and 80 mL [16, 17]. The patients that were studied were grouped into four age groups, with the majority of them falling within the 36–40 age range. The mean age of patients was (34.28) years. According to a number of research [2, 18, 19], the frequency of severe menstrual problems increased with age.

From a total 120 participants with clinical symptoms of abnormal uterine bleeding in women revealed that 35 (29.17%) of them had heavy periods, 28 (23.33%) had metrorrhagia, 22 (18.33%) had polymenorrhea, 17 (14.17%) had oligomenorrhea, 6 (5%) had amenorrhea, and 12 (10) had reported intermenstrual bleeding symptoms. Another similar study [20] report showed that the prevalence of metrorrhagia, heavy periods, oligomenorrhea, intermenstrual bleeding, polymenorrhea, and amenorrhea in reproductive aged women was 59 (26.2%), 54 (24%), 53 (23.5%), 46 (20.4%), 35 (15.5%), and 25 (11.1%), respectively. According to medical history, 33(27.5%) of the patients were suffering from type 2 diabetes mellitus, 37(30.83%) from hypertension, 16(13.33%) from both diabetes and hypertension, 7(5.83%) from hypothyroidism, 5(4.17%) from malignancy, 19(15.83%) from obesity and most of the patients 87(72.5%) were anemic. Another study [21] conducted in Bangladesh found almost similar results: 38% participants had diabetes, 12% had obesity, 18% had hypertension, 10% from both diabetes and hypertension and 4% from hypothyroidism and almost all the patients (96%) were suffering from anemia.

BMI measurements in our study group showed that 40(33.33%) overweight and 19(15.83%) Obese and Mean ± SD: 27.25±3.04; Range: 18.3-36.2 Kg/m². Previous study [22] reported that obesity has been linked to abnormal uterine bleeding. There is a higher chance of polyp development in obese women, especially when hypertension is present [22]. According to several researches [22-24], obese women are more likely than non-obese women to have irregular menstrual cycles. Several studies [15, 24, 26] found that increased age, body weight, nulliparity, irregular menstrual cycle are associated risk factors with abnormal uterine bleeding. The only risk factor found to be statistically significant was irregular menstruation, which was claimed to account for 86 (or 70%) of the cases with irregular menstrual histories.

CONCLUSION

Heavy periods, metrorrhagia and polymenorrhea are the most common clinical features of abnormal uterine bleeding. The risk factors for abnormal uterine bleeding include advancing age, obesity, nulliparity, irregular menstrual cycles, a history of diabetes, hypertension etc. Irregular menstrual histories, was the only risk factor that was statistically significant, this may be due to the small sample size. So it is possible to draw the conclusion that women with abnormal uterine bleeding may also be associated with a large uterus, repeated pregnancies and irregular menstrual cycle.

REFERENCE

1. Fraser, I. S., Critchley, H. O., & Broader, M. (2011). The FIGO recommendation on Terminologies and Definition for Normal and Abnormal Uterine Bleeding. Seminars in Reproductive Medicine, 29, 20.
2. Mahmoud, M. M., & Aseel, G. R. (2013). Endometrial histopathological changes in women with abnormal uterine bleeding in Kirkuk city, a clinicopathological study. *Med J of Babylon*, *10*, 567-582.
3. Fraser, I. S., Langham, S., & Uhl-Hochgraeber, K. (2009). Health-related quality of life and economic burden of abnormal uterine bleeding. *Expert Review of Obstetrics & Gynecology*, *4*(2), 179-189.
4. Campbell, S., & Monga, A. (2006). Gynaecology by Ten Teachers.18th ed. Arnold, 44-52.
5. Munro, M. G., Critchley, H. O., Fraser, I. S., FIGO Menstrual Disorders Committee, Haththotuwa, R., Kriplani, A., ... & Warner, P. (2018). The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. *International Journal of Gynecology & Obstetrics*, *143*(3), 393-408.
6. Fraser, I. S., Critchley, H. O., Munro, M. G., & Broder, M. (2007). A process designed to lead to international agreement on terminologies and definitions used to describe abnormalities of menstrual bleeding∗. *Fertility and sterility*, *87*(3), 466-476.
7. National Institute for Health and Care Excellence. Heavy menstrual bleeding: assessment and management. NICE guideline (NG88). https://www.nice.org.uk/guidance/NG88. Published March 14, 2018. Last updated November 2018.
8. Munro, M. G., Critchley, H. O. D., & Fraser, I. S. (2017). Research and clinical management for women with abnormal uterine bleeding in the reproductive years: More than PALM-COEIN. *BJOG*, *124*(2), 185-189.
9. Brenner, P. F. (1996). Differential diagnosis of abnormal uterine bleeding. *American journal of obstetrics and gynecology*, *175*(3), 766-769.
10. Benetti-Pinto, C. L., Rosa-E-Silva, A. C. J. S., Yela, D. A., & Soares Júnior, J. M. (2017). Abnormal uterine bleeding, *Revista Brasileira de Ginecologia e Obstetrícia*, 39(7), 358-368.
11. Munro, M. G. (2019). Uterine polyps, adenomyosis, leiomyomas, and endometrial receptivity. *Fertility and sterility*, *111*(4), 629-640.
12. Amant, F., Moerman, P., Neven, P., Timmerman, D., Van Limbergen, E., & Vergote, I. (2005). Endometrial cancer. *The Lancet*, *366*(9484), 491-505.
13. Royal College of Obstetricians and Gynaecologists. Guidelines: in-patient treatment D & C in women age 40 or less. London: The College; 1994.
14. Gallup, D. G., & Stock, R. J. (1984). Adenocarcinoma of the endometrium in women 40 years of age or younger. *Obstetrics & Gynecology*, *64*(3), 417-420.
15. Ash, S. J., Farrell, S. A., & Flowerdew, G. (1996). Endometrial biopsy in DUB. *The Journal of reproductive medicine*, *41*(12), 892-896.
16. Munro, M. G., FIGO Committee on Menstrual Disorders, Cho, S., Critchley, H., Haththotuwa, R., Kriplani, A., ... & Singh, S. S. (2020). Abnormal uterine bleeding: A well-travelled path to iron deficiency and anemia. *International Journal of Gynecology & Obstetrics*, *150*(3), 275-277.
17. Van Den Bosch, T., Verbakel, J. Y., Valentin, L., Wynants, L., De Cock, B., Pascual, M. A., ... & Timmerman, D. (2021). Typical ultrasound features of various endometrial pathologies described using International Endometrial Tumor Analysis (IETA) terminology in women with abnormal uterine bleeding. *Ultrasound in Obstetrics & Gynecology*, *57*(1), 164-172.
18. Doraiswami, S., Johnson, T., Rao, S., Rajkumar, A., Vijayaraghavan, J., & Panicker, V. K. (2011). Study of endometrial pathology in abnormal uterine bleeding. *The journal of Obstetrics and Gynecology of India*, *61*, 426-430.
19. Jairajpuri, Z. S., Rana, S., & Jetley, S. (2013). Atypical uterine bleeding-Histopathological audit

of endometrium A study of 638 cases. *Al Ameen J Med Sci*, *6*(1), 21-28.

20. Gerema, U., Kene, K., Abera, D., Adugna, T., Nigussie, M., Dereje, D., & Mulugeta, T. (2022). Abnormal uterine bleeding and associated factors among reproductive age women in Jimma town, Oromia Region, Southwest Ethiopia. *Women's Health*, *18*, 17455057221077577.
21. Sultana, N., Akhter, N., & Chowdhury, T. A. (2016). Bulky Uterus and Multiparity are Important Contributing Factors for Dysfunctional Uterine Bleeding among Bangladeshi Women. *Journal of Enam Medical College*, *6*(1), 23-27.
22. Bano, R., Datta, S., & Mahmood, T. A. (2013). Heavy menstrual bleeding. Obstetrics, Gynaecology and Reproductive Medicine, 24, 1.
23. Castillo-Martínez, L., López-Alvarenga, J. C., Villa, A. R., & González-Barranco, J. (2003). Menstrual cycle length disorders in 18-to 40-y-old obese women. *Nutrition*, *19*(4), 317-320.
24. Wei, S., Schmidt, M. D., Dwyer, T., Norman, R. J., & Venn, A. J. (2009). Obesity and menstrual irregularity: associations with SHBG, testosterone, and insulin. *Obesity*, *17*(5), 1070-1076.
25. Sharma, A. S., & Gupta, S. (2019). Analysis of body mass index in patients with abnormal uterine bleeding. *International Journal of Clinical Obstetrics and Gynaecology*, *3*(1), 92-95.
26. Farquhar, C. M., Lethaby, A., Sowter, M., Verry, J., & Baranyai, J. (1999). An evaluation of risk factors for endometrial hyperplasia in premenopausal women with abnormal menstrual bleeding. *American journal of obstetrics and gynecology*, *181*(3), 525-529.