

Relationship of Patterns of Abnormal Uterine Bleeding with Underlying Pathology

Fouzia Umer Qureshi, Shaherzad Sohail, Muhammad Tamoor Ahmed
Department of Gynae/Obstetrics, Shalamar Medical and Dental College Lahore

Abstract

Background: To establish a co-relation between different underlying uterine etiologies, and type of menstrual irregularities.

Methods: In this cross-sectional study 100 non-gravid women of reproductive age with the complaint of abnormal uterine bleeding were randomly selected. Detailed history of the irregularity of menstrual pattern was taken. Examination and investigations were performed to establish the underlying cause of abnormal uterine bleeding. Correlation was drawn between types of abnormal uterine bleeding and underlying pathology.

Results: Mean age of women was 38.3 years and mean haemoglobin was 8.92gm/dl. Heavy prolonged menstrual bleeding was the commonest (76%) complaint associated with leiomyoma (50%), followed by endometrial causes (18.4%) and adenomyosis (13.2%). Frequent menstrual bleeding in 24% was associated with ovarian (33%) and malignant causes (8.3%).

Conclusion: Heavy and prolonged menstrual cycle has a significant relationship with benign organic pathology of uterus and frequent irregular cycles is more likely associated with malignant causes.

Key words: Abnormal uterine bleeding, PALM-COEIN Classification, Irregular menstrual cycles

Introduction

Normal menstrual cycle is considered an indicator of reproductive health.¹The normal functioning of hypothalamic, pituitary and ovarian axis is essential for normal and regular menstrual cycles. The average duration of menstrual cycle is 21 to 34 days with menstrual bleeding days lasting for 3 to 7 days and average blood loss is 5 to 80 ml in each cycle.² Occasional deviation from the normal pattern is usually related to physical and psychological stress but chronic problems are usually due to underlying pathology. Menstrual cycle is governed by complex

hormonal changes. Gonadotrophic releasing hormone from hypothalamus causes pituitary to release FSH and LH which act on ovaries to release estrogen which causes growth of endometrium. Increase in estrogen has negative feedback effect. There is decrease in FSH secretion, but LH production is increased which is associated with ovulation and formation of corpus luteum which leads to increased progesterone level. Progesterone causes further thickening and secretory changes in the endometrium. Corpus luteum regresses after 14 days which leads to decrease in progesterone and estrogen level, shedding of the endometrium occur and new menstrual cycle begin. Abnormal uterine bleeding is the disturbance of regularity, frequency and duration of menstrual flow. Common patterns of abnormal uterine bleeding seen in females are heavy and prolonged bleeding and irregular uterine bleeding. Abnormal uterine bleeding is the most common symptom for which women visit their gynaecologist and it is the commonest cause for hysterectomy also.³Abnormal uterine bleeding has a social and economic effect on the women. Standardized and systematic approach is essential to establish etiology and diagnosis of abnormal uterine bleeding so proper interventions can be taken for management of the problem according to the underlying etiology.

Patents and Methods

The analytical cross-sectional study was carried out at Shalamar Hospital, Lahore from July 2017 to December 2017. The 100 non-gravid women of reproductive age with the complaint of abnormal uterine bleeding were randomly selected in the study. The patients who had a bleeding related to pregnancy or genital tract trauma were excluded from the study. Thorough history was taken followed by physical examination. For further evaluation pelvic ultrasound scan, coagulation profile, hysteroscopy and histological analysis of endometrial biopsy and/or hysterectomy was carried out, where applicable. Bleeding patterns were divided into different

categories according to FIGO recommendations on terminologies for AUB. The underlying etiologies were classified according to FIGO PALM-COEIN System. Correlation was drawn between types of abnormal uterine bleeding and underlying etiologies. All discrete variables analyzed using descriptive statistics and presented using frequency distribution curves. Correlation between different variables analyzed using standard statistical tests.

Results

There were two patterns of abnormal uterine bleeding, one heavy and with prolonged cycles and the second with frequent menstrual cycles. Mean age of women was 38.3 years and mean haemoglobin was 8.92gm/dl. The parity of participants ranged between 2 to 5 and mean was 4. Heavy prolonged menstrual bleeding was the commonest (76%) complaint associated with Leiomyoma (50%) followed by endometrial causes (18.4 %) and adenomyosis (13.2%). Frequent menstrual bleeding in (24%) was associated with ovarian (33%) and malignant causes (8.3%) (Table 1)..

Table 1: Abnormal uterine bleeding and underlying pathology

		Pattern of abnormal uterine bleeding		Total
		Heavy/prolonged menstrual bleeding	Frequent menstrual bleeding	
Etiology	Polyp	4	2	6
		5.3%	8.3%	6.0%
	Adenomyosis	10	0	10
		13.2%	.0%	10.0%
	Leiomyoma	38	10	48
		50.0%	41.7%	48.0%
	Malignancy	0	2	2
		.0%	8.3%	2.0%
	Coagulopathy	2	0	2
		2.6%	.0%	2.0%
Ovarian	2	8	10	
	2.6%	33.3%	10.0%	
Endometrial	14	0	14	
	18.4%	.0%	14.0%	
Iatrogenic	6	2	8	
	7.9%	8.3%	8.0%	
Total		76	24	100

The heavy and prolonged menstrual cycle has a significant relationship with the benign organic pathology in the uterus. The frequent irregular

menstrual bleeding is more likely to be associated with malignant causes of abnormal uterine bleeding

Discussion

Abnormal uterine bleeding is a common condition affecting women of reproductive age. Abnormal uterine bleeding is defined as bleeding from the uterus that is abnormal in regularity, frequency, volume or duration in the absence of pregnancy.⁴ The etiology of abnormal uterine bleeding is multifactorial. For proper management of abnormal uterine bleeding it is important to establish correct etiology of the condition. We used PALM-COEIN System for describing the relationship of abnormal uterine bleeding with underlying pathology. PALM-COEIN classification system is a structured approach to a multifactorial clinical problem.^{5,6} This system is developed by International Federation of Gynaecology and Obstetrics [FIGO]for causes of abnormal uterine bleeding in 2011. The two components of the system PALM (includes structural causes which are Polyp, Adenomyosis,Leiomyomas and Malignancy) and COEIN (includes functional causes which are Ccoagulopathy, Ovarian disorder, Endometrial causes, Iatrogenic and causes which are Not yet classified).⁷Toz E etal also concluded in their study conducted in Turkey the classic terminology of abnormal uterine bleeding is insufficient.⁸Deneris A also reported in his article that previous terms used for abnormal uterine bleeding are confusing.⁹Bohemond’s L and Ali M also advocated PALM-COEIN system as a standardized system to describe etiology of Abnormal uterine bleeding.¹⁰

Our study concluded that irregular bleeding is most likely associated with malignancy and regular heavy or prolonged menstrual bleeding is usually associated with benign etiologies. Studies show chronic irregular bleeding is associated with irregular shedding of endometrium which is a risk factor for malignancy.^{11,12,13}Women with irregular bleeding have more than double the risk of ovarian carcinoma compared to women who have regular periods. Chronic anovulation leads to irregular bleeding and unopposed estrogen stimulation is a risk for endometrial carcinoma. Singh A et al also concluded in their study conducted on 300 women in South India that endometrial evaluation is important to rule out malignancy and premalignant condition in women with abnormal uterine bleeding.¹⁴ All the women with irregular uterine bleeding should be evaluated by taking endometrial biopsy for histopathology to rule out malignancy.^{15,16,17} Standardization of terminology and systematic approach in diagnosis is essential for

proper management of patients with abnormal uterine bleeding.^{18,19}

Conclusion

1. Heavy and prolonged menstrual cycle has a significant relationship with benign organic pathology of uterus and frequent irregular cycles are more likely associated with malignant causes.
2. Chronic irregular menstrual bleeding needs a cautious approach, as it can be a harbinger of ominous pathology

References

1. Dasharathy S. Menstrual bleeding pattern among regularly menstruating women. *Am J Epidemiol* 2012; 175:536-45
2. Lavingstone M, Fraser I. Mechanism of abnormal uterine bleeding. *Human Reproduction Update*; 2002; 8:60-67
3. Farrukh J, Towniss K, McKee N. Abnormal uterine bleeding taking the stress out of controlling the flow. *Can Fam Physician* 2015; 61:639-37
4. Fraser I, U Inceboz. Defining disturbances of menstrual cycle. *Disorders of menstrual cycle, 1st edn*. RCOG Press, London, 2000: 141-52
5. Munro GM, Critchley HO, Broder MS. FIGO Classification System (PALM-COEIN) for cause of abnormal uterine bleeding in non-gravid women of reproductive age. *Int J Gynaecol Obstet* 2011; 113:3-6
6. Fraser IA. A process designed to lead to international agreement on terminologies and definitions used to describe abnormalities of menstrual bleeding. *Fertility and Sterility* 2007; 87:466-76
7. Fraser I. Can we achieve international agreement on terminologies and definitions used to describe abnormalities of menstrual bleeding? *Human Reproduction*. 2007; 22:635-43
8. Toz E. Comparison of classic terminology with the FIGO PALM-COEIN System for classification of the underlying cause of abnormal uterine bleeding. *Int J Gynaecol Obstet* 2016; 133:325-28
9. Deneris A. PALM COEIN Nomenclature for abnormal uterine bleeding. *J Midwifery Women's Health*. 2016; 61:376-79
10. Bahamondes L, Ali M. Recent advances in managing and understanding menstrual disorders' 1000 Prime Rep 2015; 7:33-37
11. Holland CA. Endometrial cancer: Using evidence to impact practice and policy 2016; 12:395-402
12. Pakish B J, Lu KH, Sun CC, Burzawa JK. Endometrial cancer associated symptoms: A case control study. *J Women's Health* 2016; 25:1187-92
13. Laeey JV Jr, Chia VM. Endometrial hyperplasia and risk of progression to carcinoma. *Maturitas* 2009; 63:39-44
14. Singh A, Amartcor N, Surjeet S. Study of histopathological pattern of endometrium in abnormal uterine bleeding and its management. *Int J Reprod Contracept Obstet Gynecol*. 2016; 12:432-36
15. Ely JW, Lahteenmaki P, Haukkamaa M, Puolakka J. Abnormal uterine bleeding: A management Algorithm. *J Am Board Fam Med*. 2006; 19:590-602
16. Singh S, Best C, Dunn S, Leland S. Abnormal uterine bleeding in premenopausal women. *J Obstet Gynaecol Can*. 2013; 35:473-79
17. Sanja S. Menstrual bleeding patterns among regularly menstruating women. *American journal of epidemiology*, 2012; 175:536-45
18. Farrell E. Dysfunctional uterine bleeding. *Aust Fam Physician* 2004; 33:906-08
19. Pennat ME, Mehta R, Moody P, Hackett G, Prentice A. Premenopausal abnormal uterine bleeding and the risk of endometrial cancer. *BJOG*. 2017; 124:404-11
20. Sweet M, Schmidt-Dalton TA, Weiss PM, Madsen KP. Evaluation and management of abnormal uterine bleeding in premenopausal women. *Am Fam Physician*. 2012; 85:35-43
21. Godbole G, Phadake A, Josh AR. Patterns of menstrual cycle in young adults. *Indian journal of applied and medical research*; 2013; 2:1017-21
22. Vaidya S, Lakhey M, Sharma PK, Hirachand S, Lama S. Histopathological pattern of abnormal uterine bleeding in endometrial biopsies. *Nepal Med Coll J*, 2013; 15:74-77
23. Mohan S, Page LM, Higham JM. Diagnosis of abnormal uterine bleeding. *Best Pract Res Clin Obstet Gynaecol* 2007; 21:891-95
24. Mann Z, Bernuit D, Gerlinger C, Schaefer M, Geppert K. Prevalence, symptoms and management of uterine fibroids: an international and internet-based survey of 21746 women. *BMC Women's Health* 2012; 12:6-10
25. Kjerulff K, Langenberg P, Seidman JD, Stolley PD. Uterine leiomyomas. Racial differences in severity symptoms and age at diagnosis. *The Journal of Reproductive Medicine*, 1996. 41:483-90.