

Dysfunctional Uterine Bleeding Risk Factors in Perimenopausal Women

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Abstract: Dysfunctional Uterine Bleeding (DUB) is one of the common problems in perimenopausal women. It is one of the main causes of hysterectomy. The aim of this study was to investigate risk factors associated with DUB in perimenopausal women in Sanandaj, Iran. This case-control study was conducted on 186 women who referred to Besat hospital in Sanandaj, Iran. They divided to two intervention (with DUB, n = 62) and control (without DUB, n = 124) groups. Data were collected using questionnaire by clinical interview. Data were analyzed using SPSS software and also Chi-square test, Fisher exact test and logistic regression were performed. Results showed that there were significant relationships between DUB with type of delivery ($p = 0.015$) and age ($p = 0.045$). There were no significant relationship between DUB with diabetes ($p = 0.095$), hypertension ($p = 0.917$) and type of contraceptive methods ($p = 0.906$). Analysis by logistic regression revealed that women over 50 year of age and women with history of cesarean section had a respective risk of 2.284 ($p = 0.021$) and 2.493 ($p = 0.009$) times greater to develop DUB than women without these factors. The age over 50 year and Cesarean Section (C/S) were suggested as risk factors related to DUB. Therefore vaginal delivery is suggested in order to reduce DUB.

Key words: Uterine hemorrhage, metrorrhagia, risk factors, DUB, Iran

INTRODUCTION

The most common form of abnormal uterine bleeding is dysfunctional uterine bleeding (Druckmann, 2010). Dysfunctional Uterine Bleeding (DUB) is defined as uterine bleeding >80 cc in each menstrual cycle in women that is not caused by pelvic pathology, medications, systemic disease or pregnancy (Thomas, 2011). DUB can be as polymenorrhea, hypermenorrhea, metrorrhagia and menometrorrhagia (Druckmann, 2010). The diagnosis of DUB is based on rejecting other causes such as pelvic pathology, pregnancy, tumors, infection, general bleeding disorders and intrauterine lesions (Singh and Blumenthal, 2005). This disorder affects 10-30% of women in reproductive age. It creating problems such as fatigue, pain, depression, limitations in performing activities and reduces quality of life of women (Shapley *et al.*, 2003; Cote *et al.*, 2002). DUB as a clinical disorder not only affects the health and quality of life of women negatively but also imposes significant cost on community and health system (Kucuk and Okman, 2005; Begum and Khanam, 2014). There are several treatment measures for this disorder including drug therapies (treatment with oral iron) and surgical procedures that impose considerable cost to the patient and the healthcare system (League,

2003; Broder *et al.*, 2000). There are several factors that affect DUB including the type of delivery, contraceptive methods, age, diabetes, nulliparity, hormone therapy and obesity (Agarwal *et al.*, 2016; Wang *et al.*, 2011).

Considering the fact that factors affecting DUB were varied in different studies, the aim of this study is to investigate the risk factors associated with DUB in perimenopausal women in Sanandaj, Iran.

MATERIALS AND METHODS

This case-control study was conducted on 186 women who referred to Besat hospital in Sanandaj, Iran in 2015. They divided to two case (with DUB, n = 62) and control (without DUB, n = 124) groups. Based on power of 90 and 1% of the type I error the number of control group was determined as twice case group. The case group was women who referred to Besat hospital clinic and their DUB was diagnosed by specialist after performing clinical and laboratory diagnostic procedures, including ultrasound, hormonal tests and physical examination. The control group consisted of women who had not uterine bleeding and the referred to Besat hospital clinic for other reasons. Inclusion criteria included age 40-55 year of age and exclusion criteria included other

uterine pathologies other than DUB and a history of uterine surgery or hysterectomy. Data were collected using questionnaire by clinical interview. Written consent was taken from participants. Blood pressure of all participants in both study control and case group was measured. To determine diabetes laboratory test was performed for all participants. Data were analyzed using SPSS Software and also Chi-square test, Fisher exact test and logistic regression were performed.

RESULTS

Total of 186 women participated in this study, from them 62 (33.3%) were in case group and 124 (66.6%) were in control group. The mean age of participants was 46.8 ± 3.8 year. There was a significant difference between two groups in terms of age, thus the number of patients in case group with age >50 were more than control group ($p = 0.045$).

Results showed that 82 (44.1%) women had blood pressure and 25 (13.4) women suffered from diabetes. Univariate analysis showed that there was a significant relationship between mode of delivery and DUB ($p = 0.015$). There was no significant relationship between diabetes ($p=0.095$) and blood pressure ($p = 0.906$) with DUB (Table 1 and 2).

Logistic regression analysis showed that women over 50 year were 2.9 times as likely to develop DUB ($p = 0.021$) also women who had cesarean section were 2.5 times as likely to develop DUB ($p = 0.009$).

DISCUSSION

The results of this study showed that age over 50 year and a history of cesarean section increase the risk of DUB. Pitkin (2007) in a study showed that bleeding caused by dysfunctional uterine is common in perimenopausal women. Results of our study showed that older age is a risk factor for DUB which is not in consistent with previous studies (Albers *et al.*, 2004; Shapley *et al.*, 2003).

In numerous studies cesarean section has been identified as an important risk factor for DUB (Wang *et al.*, 2011; Fabres *et al.*, 2005) which supports our findings also in women who had normal delivery DUB is fewer. In women who had cesarean section, caesarean section scar is an important factor in the development of DUB and their DUB is in the form of premenstrual spotting particularly (Wang *et al.*, 2011; Fabres *et al.*, 2005). Caesarean section has an important role in the development of DUB, therefore it should be considered when informing about the benefits of normal delivery

Table 1: Univariate analysis to determine the relationship between different variables with DUB

Variables	Case group (DUB) No. (%)	Control group No. (%)	Odds ratio confidence interval 95%	p-values
Mode of delivery	38 (61.3)	97 (87.2)	2.69	0.015*
Natural C/S	24 (38.7)	27 (21.8)	(1.66-4.415)	
Contraceptive methods	16 (25.8)	33 (26.6)	0.959	1.000
Hormonal			(0.479-1.921)	
Condom	4 (6.5)	6 (4.8)	1.365	0.733
			(0.368-4.995)	
IUD	13 (21)	31 (25)	0.796	0.587
			(0.382-1.659)	
Natural	9 (14.5)	25 (20.2)	0.672	0.423
TL	20(32.3)	29 (23.4)	1.560	0.219
			(0.794-3.066)	
Age (years)				
50	40 (64.5)	97 (78.2)	1.976	0.045*
≥ 50	22 (35.5)	27 (21.8)	(1.008-3.872)	
Diabetes				
Yes	12 (19.4)	13 (10.5)	0.488	0.095
No	50 (80.6)	111 (89.5)	(0.208-1.145)	
Blood hypertension				
Yes	27 (43.5)	35 (56.5)	1.033	0.917
No	55 (44.4)	69 (55.6)	(0.559-1.91)	

*Significant

Table 2: Multivariate analysis to determine the relationship between age, diabetes and mode of delivery with DUB

Variables	The adjusted odds ratio and confidence interval 95%			p-values
	Odds ratio	Min.	Max.	
Age (>50 than <50)	2.90	1.13	4.60	0.021
Diabetes (Yes than No)	2.28	0.93	5.55	0.069
Mode of delivery (C/S than natural)	2.49	1.25	4.96	0.009

to prevent complications and possible costs of DUB. No significance was found between contraceptive methods and history of hormone therapy with DUB in the present study. In similar studies (Wendling, 2010; Blumenthal *et al.*, 2006; Micks and Jensen, 2013) the role of hormone therapy and hormonal methods of contraception have been emphasized as the treatment and to control DUB and the effect of these methods to reduce DUB is confirmed. In a study by Davis *et al.* (2000), they concluded that oral contraceptive medications are effective in controlling and improving DUB. Mehrabian and Abbasi (2013) concluded that oral contraceptive pills control the amount and duration of the bleeding more effectively.

There was no significant relationship between blood pressure and DUB in this study. A study that examines the relationship between these two presently is not available. Given the dangerous complications associated with high prevalence of high blood pressure in the population, particularly in premenopausal women finding a relationship is important. More attention to this topic in the future studies is essential.

There are different results about the relationship between diabetes and DUB which are contradictory. In the present study no relationship was found between diabetes and DUB but the significance level was on the borderline. In a study by Blumenthal *et al.* (2006), the results showed that women who had diabetes more likely to suffer from DUB. Strotmeyer *et al.* (2003) in their study concluded that there was a relationship between DUB and diabetes before the age of 30 but after the age of 30 there was no association between these two (Strotmeyer *et al.*, 2003).

CONCLUSION

The age over 50 year, Cesarean Section (C/S) and somehow diabetes are risk factors for DUB. Therefore, vaginal delivery is suggested in order to reduce DUB.

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