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Research Article

Abnormal uterine bleeding: a clinicohistopathological analysis

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is one of the most common problem for the patients and the gynecologists. It adversely effects on the quality of life and psychology of women. It is of special concern in developing country as it adds to the causes of anemia. Management of Abnormal Uterine Bleeding (AUB) is not complete without tissue diagnosis especially in perimenopausal and post-menopausal women. Histological characteristics of endometrial biopsy material as assessed by light microscopy remains the diagnostic standard for the diagnosis of endometrial pathology.
Methods: In our prospective study of 359 Patients of the age between 46 &73 years, clinical characteristics and the pattern of endometrial histopathology and their association in women, who present with abnormal uterine bleeding, are categorised into six groups.
Results: In our study, a significant correlation of histopathology & BMI was observed with endometrial hyperplasia and malignancy in obese patient i.e. 37 out 96 and 13 out of 23 respectively. The incidence of malignancy has been increasing with the age being 1.6% in 46-50 years to 60% in 70-75 years. In our study 116 (32.3%) had hypertension, 33 patients (9.2%) had diabetes mellitus, 40 patients (11.1%) had hypothyroidism.
Conclusions: We found a maximum incidence of AUB in multiparous women. Clinicohistopathological analysis of AUB revealed endometrial hyperplasia in majority of patients.

Keywords: Abnormal uterine bleeding (AUB), Endometrial hyperplasia, malignancy, Hypertension, Diabetes mellitus

INTRODUCTION

Abnormal Uterine Bleeding (AUB) is considered as one of the most common and perplexing problem both for the patients and the gynecologists. It has an adverse effect on the quality of life and psychological state of women. It is of special concern in developing country as it adds to the causes of anemia which is already prevailing in women. Management of Abnormal Uterine Bleeding (AUB) is not complete without tissue diagnosis especially in perimenopausal and post-menopausal women. Accurate analysis of endometrial sampling[1] and localization of intrauterine lesions is the goal to effective management and better outcome of problem. Histological characteristics of endometrial biopsy material as assessed by light microscopy remains the diagnostic standard for the diagnosis of endometrial pathology.

METHODS

This was a prospective observational study. A total of 359 women, who are more than 45 years of age with abnormal uterine bleeding, who needed endometrial curettage were included in the study. Written, informed consent was taken from the patients. We recorded the details in the designed proforma which included the information about, patient characteristics, obstetric profile, pattern of bleeding, history of drug intake and

medical history. The type of abnormal uterine bleeding and the pattern of blood loss were described according to the FIGO recommendations on terminologies and definitions for normal and abnormal uterine bleeding. Amount of bleeding was assessed using pictorial blood assessment chart. General physical examination and local examination was performed. Patients on admission, were screened for hypertension, diabetes mellitus and hypothyroidism. Endometrial curettage was performed by a gynecologist and specimens were transported in 10% formalin to the pathology laboratory. Microscopic examination was done by pathologists. We recorded the details in the designed proforma that included information about patient characteristics, obstetric profile, pattern of bleeding and co morbidities.

Inclusion criteria: we included women with isolated endometrial causes of abnormal uterine bleeding, more than 45 years of age, undergoing endometrial curettage, in the study.

Exclusion criteria: we excluded women with coagulation disorders (thrombocytopathies, Von Willebrand's disease, and leukemia) and on medications including antiplatelets and anticoagulants, Findings were tabled.

RESULTS

Total 369 patients were included in the study from the age group of 45 years to 73 years.

Table 1: Age distribution of the patients with AUB.

Age group	Frequency	Percentage
46-50	188	52.4
51-55	102	28.4
56-60	33	9.2
61-65	23	6.4
66-70	8	2.2
71-75	5	1.4
Total	359	100

There are 188 patients were in the age group of 46 to 50 years (52.4%).

Table 2: Parity distribution of the patients with AUB.

Parity	Frequency	Percentage
Nulliparous	23	6.4
Primiparous	135	37.6
Multiparous	192	53.5
Grandmultiparous	9	2.5
Total	359	100

Majority of our patients were multiparous women (192 patients, 53.5%). 135 patients, 37.5% were primiparous; 23 patients, 6.4% were nulliparous; 9 patients, 2.5% were grandmultiparous.

No significant association was found between pattern of histopathology & parity distribution with a P value of 0.67.

Type of AUB

Table 3 shows Type of AUB.

Table 3: Type of AUB.

Type of AUB	Frequency	Percentage
Acute AUB	61	16.9
Chronic AUB	87	24.2
Acute on chronic AUB	44	12.2
Intermenstrual bleeding	11	3.1
Post-menopausal bleeding	157	43.6
Total	359	100

A significant association was found between pattern of histopathology & type of AUB with a P value of <0.01. As seen in the above table 157 (43.6%) patients presented with post-menopausal bleeding, followed by 87 (24.2%) patients with chronic AUB.

Table 4: Histopathological distribution in different age groups of the patients with AUB.

Histopathology	46-50	51-55	56-60	61-65	66-70	71-75	Total
Normal cyclical pattern	50 (26.6%)	34 (33.3%)	6 (18.2)	3 (13.9%)	1 (12.5%)	0 (0%)	94 (26.2%)
Atrophic endometrium	5 (2.7%)	4 (3.9%)	3 (9.1%)	3 (13%)	3 (37.5%)	2 (40%)	20 (5.6%)
Endometrial polyp	16 (8.5%)	10 (9.8%)	2 (6.1%)	2 (8.7%)	1 (12.5%)	0 (0%)	31 (8.6%)
Disordered proliferative endometrium	18 (9.6%)	13 (12.7%)	4 (12.1%)	2 (8.7%)	0 (0%)	0 (0%)	37 (10.3%)
Endometrial hyperplasia	59 (31.4%)	24 (23.5%)	9 (27.3%)	4 (17.4%)	0 (0%)	0 (0%)	96 (26.7%)
Endometrial malignancy	3 (1.6%)	4 (3.9%)	6 (18.2%)	5 (21.7%)	2 (25%)	3 (60%)	23 (6.4%)
Others	37 (19.7%)	13 (12.7%)	3 (9.1%)	4 (17.4%)	1 (12.5%)	0 (0%)	58 (16.2%)
Total	188 (100%)	102 (100%)	33 (100%)	23 (100%)	8 (100%)	5 (100%)	359 (100%)

*P value <0.01; Chi-square test

Most commonly found histopathology was endometrial hyperplasia (26.7%). The incidence of malignancy has been increasing with the age being 1.6% in 46-50 years to 60% in 70-75 years.

Table 5: Histopathological distribution in different studies of the patients with AUB.

Histopathology	Doraiswami et al. (409 patients)	Baral et al. (300 patients)	Smitha et al. (210 patients)	Sarvat et al. (161 patients)	Present study (359 patients)
Normal cyclical pattern	28.3%	36.6%	24.28%	34.1%	26.2%
Atrophic endometrium	2.4%	-	-	-	5.6%
Endometrial polyp	11.2%	-	5.7%	4.3%	8.9%
Disordered proliferative endometrium	20.5%	26.6%	-	-	10.3%
Chronic endometritis	4.1%	2.6%	7.1%	6.2%	6.4%
Inadequate sample	-	8.3%	-	-	9.5%
Hyperplasia	6.1%	18.3%	41.9%	27.9%	26.7%
Endometrial malignancy	4.4%	1%	2.38%	1.86%	6.4%

The present study included only perimenopausal and post-menopausal women which lead to a greater number of women with malignancy (6.4%) as compared to other studies which included all the women from menarche to menopause (Table 5). A significant association was found between pattern of histopathology & BMI with a P value of <0.01. Majority of the patients with endometrial hyperplasia and malignancy were obese 37 out 96 and 13 out of 23 respectively. In the group of participants with underweight and normal BMI normal cyclical pattern was most commonly found in 32 out of 50 and 28 out of 95 patients respectively. In pre obese and obese group endometrial hyperplasia was most prevalent in 34 of 97 and 37 of 117 patients respectively (Table 6).

Table 6: BMI distribution with pattern of histopathology of the patients with AUB.

Histopathology	Under weight <18.50	Normal 18.50-24.99	Pre-obese 25.00-29.99	Obese 30.00<	Total
Normal cyclical pattern	32 (8.9%)	28 (7.8%)	16 (4.5%)	18 (5%)	94 (26.2%)
Atrophic endometrium	1 (0.3%)	4 (1.1%)	5 (1.4%)	10 (2.9%)	20 (5.6%)
Endometrial polyp	4 (1.1%)	10 (2.8%)	10 (2.8%)	7 (1.9%)	31 (8.6%)
Disordered proliferative endometrium	9 (2.5%)	12 (3.3%)	12 (2.2%)	8 (2.2%)	37 (10.3%)
Endometrial hyperplasia	1 (0.3%)	24 (6.7%)	34 (9.5%)	37 (10.3%)	96 (26.7%)
Endometrial malignancy	2 (0.6%)	3 (0.8%)	5 (1.4%)	13 (3.6%)	23 (6.4%)
Others	1 (0.3%)	14 (3.9%)	19 (5.3%)	24 (6.7%)	58 (16.2%)
Total	50 (13.9%)	95 (26.5%)	97 (27%)	117 (32.5%)	359 (100%)

*P value <0.01; Chi-square test

Table 7: Hypertension with pattern of histopathology of the patients with AUB.

Histopathology	Hypertensives	Normotensives	Total
Normal cyclical pattern	8 (2.2%)	86 (24%)	94 (26.2%)
Atrophic endometrium	12 (3.3%)	8 (2.2%)	20 (5.6%)
Endometrial polyp	5 (1.4%)	26 (7.2%)	31 (8.6%)
Disordered proliferative endometrium	1 (0.3%)	36 (10%)	37 (10.3%)
Endometrial hyperplasia	68 (18.9%)	28 (7.8%)	96 (26.7%)
Endometrial malignancy	14 (3.9%)	9 (2.5%)	23 (6.4%)
Others	8 (2.2%)	50 (13.9%)	58 (16.2%)
Total	116 (32.3%)	243 (67.7%)	359 (100%)

*P value <0.01; Chi-square test

A significant association was found between pattern of histopathology & hypertension with a p value of <0.01. Hypertension was more common in patients with atrophic endometrium, endometrial hyperplasia and endometrial malignancy with 12 out of 20, 68 out of 96 and 14 out of 23 patients respectively. Majority of the patients 68 out of 116 with hypertension had endometrial hyperplasia.

Table 8: Diabetes with pattern of histopathology of the patients with AUB.

Histopathology	Diabetics	Non-diabetics	Total
Normal cyclical pattern	3 (0.8%)	91 (25.3%)	94 (26.2%)
Atrophic endometrium	6 (1.7%)	14 (3.9%)	20 (5.6%)
Endometrial polyp	1 (0.3%)	30 (8.4%)	31 (8.6%)
Disordered proliferative endometrium	0 (0%)	37 (10.3%)	37 (10.3%)
Endometrial hyperplasia	16 (4.5%)	80 (22.3%)	96 (26.7%)
Endometrial malignancy	6 (1.7%)	17 (4.7%)	23 (6.4%)
Others	1 (0.3%)	57 (15.9%)	58 (16.2%)
Total	33 (9.2%)	326 (90.8%)	359 (100%)

*P value <0.01; Chi-square test

A significant association was found between pattern of histopathology & diabetes with a p value of <0.01. Diabetes was more common in patients with atrophic endometrium, endometrial hyperplasia and endometrial malignancy with 6 out of 20, 16 out of 96 and 6 out of 23 patients respectively. Majority of the patients 16 out of 33 with diabetes had endometrial hyperplasia.

Table 9: Hypothyroidism with pattern of histopathology of the patients with AUB.

Histopathology	Hypo-thyroids	Non hypo-thyroids	Total
Normal cyclical pattern	6 (1.7%)	88 (24.5%)	94 (26.2%)
Atrophic endometrium	1 (0.3%)	19 (5.3%)	20 (5.6%)
Endometrial polyp	4 (1.1%)	27 (7.5%)	31 (8.6%)
Disordered proliferative endometrium	4 (1.1)%	33 (9.2%)	37 (10.3%)
Endometrial hyperplasia	19 (5.3)%	77 (21.4%)	96 (26.7%)
Endometrial malignancy	6 (1.7)%	17 (4.7%)	23 (6.4%)
Others	0 (0%)	58 (16.2%)	58 (16.2%)
Total	40 (11.1%)	319 (88.9%)	359 (100%)

*P value <0.01; Chi-square test

A significant association was found between pattern of histopathology & hypothyroidism with a P value of <0.01. Hypothyroidism was more common in patients with endometrial hyperplasia and endometrial malignancy with 19 out of 96 and 6 out of 23 patients respectively. Majority of the patients 19 out of 40 with hypothyroidism had endometrial hyperplasia.

Pattern of bleeding in perimenopausal women

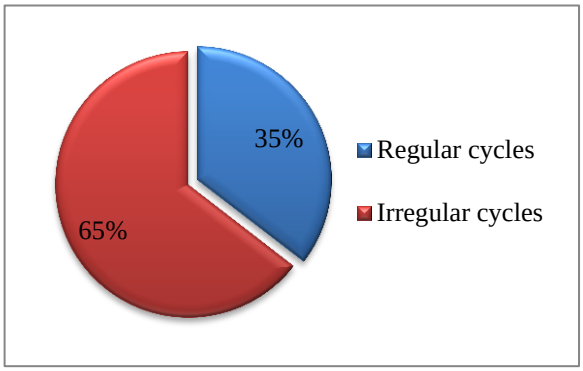

Figure 1: Regularity of menstrual cycle.

The most commonly noted pattern of bleeding was irregular cycles in 65% of women.

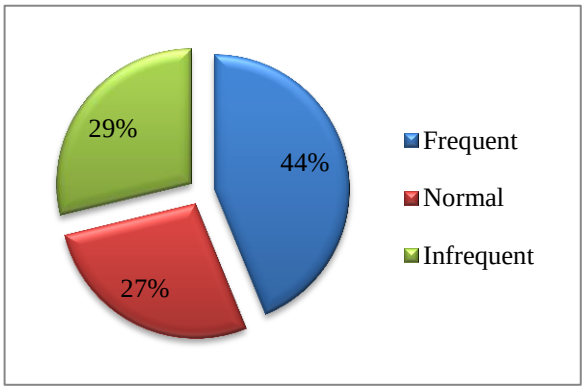

Figure 2: Frequency of menstrual cycle.

Increased frequency of cycles was found in majority of patients (44%).

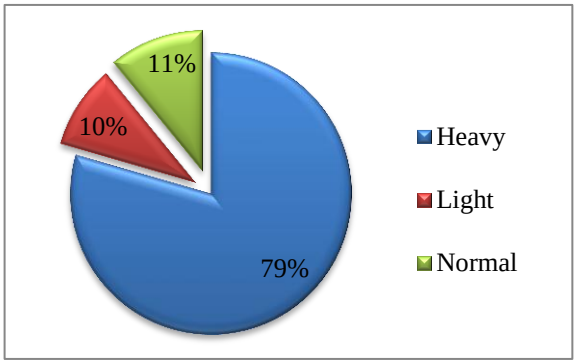

Figure 3: Amount of flow during menstrual cycle.

Heavy bleeding (80 ml<) was found in 79% of our participants.

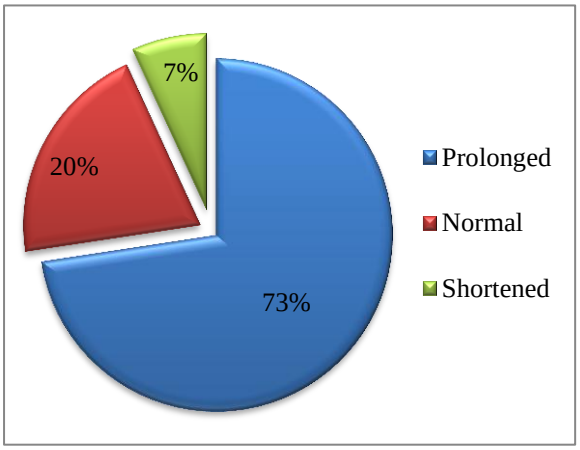

Figure 4: Duration of flow during menstrual cycle.

No significant association was found between pattern of histopathology & bleeding pattern with a P value of >0.05. The most commonly noted pattern of bleeding was prolonged bleeding in 73% of the patients.

DISCUSSION

AUB is one of the most frequent complaints from the gynecological patients. Dilatation and curettage is the common procedure done to evaluate AUB.[1]

In our study 359 patients were included from 46 to 73 years of age. In our present study the age group which was most susceptible to abnormal uterine bleeding was 46-50 years with 52.4% of patients (Table 1).

Doraiswami et al. noted in 41-50 years age group with 33.5% patients.[4] The reason for increased incidence of AUB in this age group may be due to the fact that these women are in their climacteric period approaching menopause, when cycles become intermittently anovulatory due to decline in the number of ovarian follicles and estradiol level.

We found a maximum incidence (53.5%) of AUB in multiparous women (Table 2). A similar result was also found by Rajesh Patil et al. with a percentage of 71.58%,[2] Smitha et al. got 60.95%. Most commonly found histopathology was endometrial hyperplasia (26.7%).[3] The incidence of malignancy has been increasing with the age being 1.6% in 46-50 years to 60% in 70-75 years.

Postmenopausal women accounted for 43.6% of our patients (Table 3). A significant association was found between pattern of histopathology & type of AUB with a P value of <0.01. As seen in the table 157 (43.6%) patients presented with post-menopausal bleeding, followed by 87 (24.2%) patients with chronic AUB. Amongst the women in perimenopausal age group the most common type of abnormal uterine bleeding was chronic AUB. The most commonly noted pattern of bleeding was irregular cycles in 65% of women, increased frequency of cycles in 44%, heavy bleeding in 79% and prolonged bleeding in 73%. We found endometrial hyperplasia as the most common pathological lesion (26.7%) on histopathology (Table 4).

Ara and Roohi noted hyperplasia in 27.95% of cases.[5] Smitha et al. was 41.90%[6] The incidence of hyperplasia was 6.1% in Doraiswami et al. (Table 5).

A significant association was found between pattern of histopathology & BMI with a P value of <0.01. Majority of the patients with endometrial hyperplasia and malignancy were obese 37 out 96 and 13 out of 23 respectively. In the group of participants with underweight and normal BMI normal cyclical pattern was most commonly found in 32 out of 50 and 28 out of 95 patients respectively. In pre obese and obese group endometrial hyperplasia was most prevalent in 34 of 97 and 37 of 117 patients respectively (Table 6).[7] Another significant relation was found between pattern of histopathology & hypertension and diabetes[7] with a P value of <0.01. Hypertension was more common in patients with atrophic endometrium, endometrial hyperplasia and endometrial malignancy with 12 out of 20, 68 out of 96 and 14 out of 23 patients respectively. Majority of the patients 68 out of 116 with hypertension had endometrial hyperplasia (Table 7).

Also there with diabetes mellitus as majority of these patients 16 out of 33 with diabetes had endometrial hyperplasia (Table 8).

We have also observed that in hypothyroidism patients a significant P value of <0.01. With endometrial hyperplasia and endometrial malignancy with 19 out of 96 and 6 out of 23 patients respectively (Table 9).

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