

# A COMPARATIVE STUDY OF CLINICAL EXAMINATION, ULTRASOUND FINDINGS, DIAGNOSTIC HYSTEROSCOPY WITH HISTOPATHOLOGICAL EXAMINATION REPORT OF ENDOMETRIUM IN PATIENTS WITH ABNORMAL UTERINE BLEEDING

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## ABSTRACT

### BACKGROUND AND OBJECTIVES

Abnormal Uterine Bleeding (AUB) is a very frequent gynaecological complaint and occurs across the entire age spectrum, approximately 75000 hysterectomies are carried out each year with 30% of these for menstrual problems alone. These menstrual aberrations occur more commonly at extremes of reproductive life. The introduction of hysteroscopy has opened a new dimension in evaluation of patient with AUB replacing the blind technique of Dilatation and Curettage. The present study was undertaken to know the accuracy of various tests with Histopathology.

### MATERIALS AND METHODS

The present prospective study was carried out on 100 patients from reproductive, perimenopausal and postmenopausal age group with abnormal uterine bleeding in Dr. B. R. Ambedkar Medical College and Hospital.

### RESULTS

In the present study, in relation to histopathological examination, clinical findings and hysteroscopy had better accuracy (72%) as compared to ultrasound findings (41%) in diagnosis of abnormal uterine bleeding.

### CONCLUSION

Hysteroscopy guided biopsy and histopathology complements each other in the evaluation of patient with abnormal uterine bleeding for accurate diagnosis and further treatment.

### KEYWORDS

Abnormal uterine bleeding (AUB), Hysteroscopy, HPE, Transvaginal ultrasound, Dysfunctional Uterine bleeding, post menopause, peri menopausal.

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**INTRODUCTION:** Abnormal uterine bleeding (AUB) is one of the most frequent menstrual complaints, accounting for nearly 30% of all out patient attendance.<sup>1</sup> Abnormal uterine bleeding is defined as any bleeding from the genital tract which is deviation from normal menstrual cycles in frequency, cyclicity or quantity. Cycles that are longer than 35 days (oligomenorrhoea), bleeding that occurs more frequently (polymenorrhoea) and bleeding that lasts more than 7 days (menorrhagia) should be considered abnormal, particularly after first two years from the onset of menarche.<sup>2</sup> AUB is categorised into five distinct groups according to its cause.<sup>3,4</sup> These include complications of pregnancy, reproductive tract abnormalities, systemic diseases, iatrogenic factors and dysfunctional uterine bleeding. Complications related to pregnancy include ectopic pregnancy, gestational trophoblastic disease, spontaneous abortions, placental polyp and subinvolution of placental site. Reproductive tract abnormalities include fibroids,

adenomyosis, polyps (cervical or endometrial) and infections.

Clinical examination can elicit several anatomical causes of AUB. Complete physical examination should be followed by thorough pelvic examination. During pelvic examination, the cervix should be looked for any abnormality and size and shape of uterus should be examined. In gynaecology, ultrasound has replaced x-ray as a non-invasive imaging technique and has become an established screening method. Advantages of transvaginal sonography include direct access to pelvis, can be done in empty bladder which reduces discomfort to patient and reduces procedure time, better resolution and maximal information in obesity and adhesions. The endometrium should be visualised from fundus to internal os and measured on long axis image of uterus. Endometrial polyp and hyperplasia appear as thickened endometrium.

In endometrial carcinoma, the endometrial thickness varies but is generally >16 mm and most often >20 mm, an irregular hypoechoic intracavitary mass may be seen.<sup>5</sup> Dilatation and Curettage can be done under Intravenous sedation to obtain endometrial tissue for Histopathological examination. During curettage, all the walls of the uterine cavity should be curetted well for better sampling. The

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traditional dilatation and curettage can miss focal intrauterine lesions like polyps and carcinoma. Hysteroscopy illuminates the darkness of uterine cavity and is considered the gold standard in the evaluation of AUB.

It is a technique in which an endoscope is introduced in the cervical canal and uterine cavity through vagina for visualisation of endocervical canal and uterine cavity, fibro-optical transmitted light provides illumination, distension of uterine cavity is obtained with appropriate media and video camera attached to the telescope allows monitoring on a television screen with magnification. On hysteroscopy, endometrial hyperplasia appears as thick uneven endometrium with rich superficial vascularisation, endometrial polyp appears as smooth discrete shiny vascular structure, endometrial carcinoma appears as irregular lesion with rich vascularisation, surface ulceration and bleeding.<sup>6</sup> Endometrial samples obtained either by Dilatation and curettage or Hysteroscopy guided endometrial biopsy should be sent for Histopathological examination for confirmation of diagnosis and initiation of appropriate treatment.

**AIMS AND OBJECTIVES:**

- To study the accuracy of the following diagnostic methods in the evaluation of abnormal uterine bleeding in reproductive, perimenopausal and postmenopausal age groups by:
  - Clinical examination (Bimanual Findings).
  - Ultrasound findings.
  - Diagnostic Hysteroscopy.
  - Dilatation and Curettage.
- To correlate the accuracy of these diagnostic methods with histopathological examination as a standard to reach a diagnosis.

**METHODOLOGY:** A prospective randomised study was conducted on 100 patients with abnormal uterine bleeding attending Outpatient as well as Inpatient Department of Obstetrics and Gynaecology in Dr. B. R. Ambedkar Medical College and Hospital.

**Inclusion Criteria:** All patients in reproductive, perimenopausal and postmenopausal with abnormal uterine bleeding.

**Exclusion Criteria:** Obstetrical patients with abnormal bleeding, puberty menorrhagia, unmarried girl with abnormal bleeding. A prospective study over a period of two years from August 2013 till August 2015 was undertaken. A detailed history was taken and clinical examination including bimanual pelvic examination done, Transvaginal scan done and Endometrial thickness noted. Under Spinal or General anaesthesia, Hysteroscopy done and findings noted following which endometrial curettage done and sample sent for Histopathological examination.

**RESULTS:** The observations were tabulated and results were obtained by using statistical methods like chi-square test and Fisher exact test.

Age Groups	Total	Percentage
Group A: Reproductive (18-40 years)	50	50%
Group B: Perimenopausal (41-50 years)	37	37%
Group C: Postmenopausal (> 51 years)	13	13%
<b>Total</b>	<b>100</b>	<b>100%</b>

*Table 1: Distribution of Age Groups*

In the present study, AUB was more common in reproductive age group (50%).

Duration of Complaints (In Months)	Group A	Group B	Group C	Total	P- Value
1 – 6	39(78%)	28(76%)	9(69%)	76	0.344
7 – 12	8(16%)	9(24%)	4(31%)	21	
>12	3(6%)	NIL	NIL	3	
<b>Total</b>	<b>50</b>	<b>37</b>	<b>13</b>	<b>100</b>	

*Table 2: Duration of Complaints in the Three Groups Studied*

Complaints	Group A	Group B	Group C	Total	P-Value
Menorrhagia	40(80%)	19(51.3%)	Nil	59(59%)	<0.001
Postmenopausal bleeding	Nil	Nil	13(100%)	13(13%)	
Polymenorrhoea	3(6%)	8(2.16%)	Nil	11(11%)	
DUB	4(8%)	3(8.1%)	Nil	7(7%)	
Metrorrhagia	3(6%)	7(18.9%)	Nil	10(10%)	
<b>Total</b>	<b>50</b>	<b>37</b>	<b>13</b>	<b>100</b>	

*Table 3: Patients Presented With Following Complaints*

Uterus Size In weeks	Group A	Group B	Group C	Total	P-Value
Normal	16(32%)	16(43.2%)	4(31%)	36(36%)	0.227
6 Weeks	15(30%)	12(32.4%)	5(38%)	32(32%)	
8 Weeks	12(24%)	6(16.2%)	4(31%)	22(22%)	

10 Weeks	5(10%)	2(5.4%)	-	7(7%)
12 Weeks	2(4%)	1(2.7%)	-	3(3%)
<b>Total</b>	<b>50</b>	<b>37</b>	<b>13</b>	<b>100</b>

**Table 4: Uterus Size Distribution of Patients Studied**

USG-TT (mm)	Group A	Group B	Group C	Total	P-Value
1- 5	0	0	0	0	0.020
6 – 10	18(36%)	14(37.8%)	5(38%)	37(37%)	
11 – 15	29(58%)	19(51.3%)	3(24%)	51(51%)	
>15	3(6%)	4(10.8%)	5(38%)	12(12%)	
<b>Total</b>	<b>50</b>	<b>37</b>	<b>13</b>	<b>100</b>	

**Table 5: Ultrasound Endometrial Thickness (ET) Distribution in Patients Studied**

Hysteroscopy	Group A	Group B	Group C	Total	P-Value
Normal	8(16%)	6(16.2%)	-	14(14%)	0.416
Endometrial Hyperplasia	32(64%)	19(51.3%)	8(62%)	59(59%)	
Endometrial Polyp	8(16%)	10(27.02%)	5(38%)	23(23%)	
Submucous Fibroid	2(4%)	2(5.4%)	-	4(4%)	
<b>Total</b>	<b>50</b>	<b>37</b>	<b>13</b>	<b>100</b>	

**Table 6: Hysteroscopy Findings in Patients Studied**

Amount	Group A	Group B	Group C	Total	P-Value
Profuse	40(80%)	24(65%)	6(46%)	70(70%)	0.041
Scanty	10(20%)	13(35%)	7(54%)	30(30%)	
<b>Total</b>	<b>50</b>	<b>37</b>	<b>13</b>	<b>100</b>	

**Table 7: Amount of Tissue Obtained in Curettage**

Histopathology	Group A	Group B	Group C	Total
Endometrial Polyp	8(16%)	11(29.7%)	2(15.3%)	21(21%)
Simple hyperplasia without atypia	9(18%)	7(18.9%)	4(30.7%)	20(20%)
Proliferative Phase	13(26%)	6(16.2%)	-	19(19%)
Carcinoma Endometrium	-	3(8.1%)	7(53.8%)	10(10%)
Secretory Phase	4(8%)	3(8.1%)	-	7(7%)
Late Secretory Phase	5(10%)	1(2.7%)	-	6(6%)
Disordered proliferative Endometrium	2(4%)	3(8.1%)	-	5(5%)
Complex hyperplasia Without Atypia	4(8%)	-	-	4(5%)
Mixed Endometrium	3(6%)	1(2.7%)	-	4(4%)
Submucous Myoma	2(4%)	1(2.7%)	-	3(3%)
Chronic Endometritis	-	1(2.7%)	-	1(1%)
<b>Total</b>	<b>50</b>	<b>37</b>	<b>13</b>	<b>100</b>

**Table 8: Histopathological Findings in Patients Studied**

Uterus Size	Histopathology			Total
	Positive	Negative	Total	
Positive	47	17	64	
Negative	11	25	36	
<b>Total</b>	<b>58</b>	<b>42</b>	<b>100</b>	

**Table 9: Diagnostic Accuracy between Clinical Findings and Histopathology**

Sensitivity	73.44%
Specificity	69.44%
Positive Predictive Value	81.03%
Negative Predictive Value	59.52%
Accuracy	72%

The above tables indicate that clinical findings in association with Histopathological report has an accuracy of 72% in the diagnosis of AUB.

USG ET	Histopathology			Total
	Positive	Negative	Total	
Positive	31	32	63	
Negative	27	10	37	
<b>Total</b>	<b>58</b>	<b>42</b>	<b>100</b>	

**Table 10: Diagnostic Accuracy between Ultrasound Endometrial Thickness with Histopathology**

Sensitivity	49.21%
Specificity	27.03%
Positive Predictive Value	53.45%
Negative Predictive Value	23.81%
Accuracy	41%

The above table indicates that Ultrasound - Endometrial Thickness in association to Histopathology has an accuracy of 41% in the diagnosis of AUB.

	Histopathology	Positive	Negative	Total
Hysteroscopy	Positive	58	28	86
	Negative	0	14	14
	<b>Total</b>	<b>58</b>	<b>42</b>	<b>100</b>

**Table 11: Diagnostic Accuracy between Hysteroscopy and Histopathology**

Sensitivity	67.44%
Specificity	76.84%
Positive Predictive Value	100%
Negative Predictive Value	33.3%
Accuracy	72%

The above table indicates that Hysteroscopy has a Positive Predictive Value of 100% and accuracy of 72% in the diagnosis of AUB.

**DISCUSSION:** Abnormal uterine bleeding is the main reason women are referred to gynaecologists and account for two thirds of all hysterectomies.<sup>7</sup> Approximately, 50% of women by the age of 46, 75% by 48 years and 95% by 51 years' experience menstrual abnormalities. 20% of patients presenting to gynaecologist have abnormal uterine bleeding.

This percentage increases to 69% when perimenopausal and postmenopausal age groups are considered.<sup>8</sup> The variation could be physiological, hormonal change or due to benign or malignant conditions, hence needs a proper evaluation with clinical examination, ultrasound, hysteroscopy, curettage with histopathological examination.

The following tables show comparison of present study with other studies.

Age Group	Sunitha et al <sup>9</sup>	Neetha et al <sup>10</sup>	Radhalakshmi et al <sup>11</sup>	Present Study
Group A	44%	30.3%	54.4%	50%
Group B	36%	54.3%	34.3%	37%
Group C	20%	15.4%	22.3%	13%

**Table 12: Comparison of Age**

Parity	Neetha et al <sup>10</sup>	Present Study
Nulliparous	9.1%	0%
Multiparous	90.9%	100%

**Table 13: Comparison of Parity**

Duration	Sunitha et al <sup>9</sup>	Neetha et al <sup>10</sup>	Radhalakshmi et al <sup>11</sup>
<6 months	28%	27%	76%
7 - 12 months	30%	31%	21%
>12 months	42%	42%	3%

**Table 14: Comparison of Duration of Complaints**

Complaints	Sunitha et al <sup>9</sup>	Radhalakshmi et al <sup>11</sup>	Neetha et al <sup>10</sup>	Present Study
Menorrhagia	46%	55%	49.7%	59%
Polymenorrhoea	12%	10%	10.9%	11%
DUB	-	13%	8%	7%
Postmenopausal Bleeding	32%	8%	16.6%	13%
Metrorrhagia	10%	2%	13%	10%

**Table 15: Comparison of Distribution of Complaints**

Hysteroscopy Findings	Sunitha et al <sup>9</sup>	Neetha et al <sup>10</sup>	Present Study
Normal	54%	14%	14%
Endometrial Hyperplasia	20%	61%	59%
Polyp	14%	7.4%	23%
Submucous Myoma	4%	5.7%	4%

**Table 16: Comparison of Hysteroscopy Findings**

	Sensitivity	Specificity	PPV	NPV	Accuracy
Clinical Findings (Uterus Size in Weeks)	73.44%	69.44%	81.03%	59.52%	72%
Ultrasound Findings (et in mm)	49.21%	27.03%	53.45%	23.81%	41%
Hysteroscopy	67.44%	76.84%	100%	33.33%	72%

**Table 17: Comparison of Clinical Findings, USG - ET, Hysteroscopy of the Present Study**

In relation to histopathological examination, clinical findings and hysteroscopy had better accuracy (72%) as compared to ultrasound findings (41%).

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