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An Analysis Comparing Imaging (Usg) With The Concurrent Hysteroscopy Findings And There Diagnostic Accuracy And Necessity Of Hysteroscopy For Detection Of Causes Abnormal Bleeding And Those With A High Suspicion Of Cancer Endometrium,At Ahpgic

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ABSTRACT: AIM –OBJECTIVES – The aim of the study is to corelate the usg findings with the hysteroscopic and hps findings for all patients with abnormal uterine bleeding at our institute,and the accuracy of detection endometrial cancer, post imaging follwed by diagnostic hyteroscopic biopsy from 2016 to 2019 in suspected cases for endometrial cancer.

MATERIAL METHODS : All patiens who presented to gynaecology oncology opd of ahpgic ,with abnormal bleeding, with thickened endometrium and sol in tvs were included . There details recorded were age, menopausal status and or bleeding irregularities or asymptomatic, underwent a diagnostic hysteroscopy. An effort was made to categorise the lesions as homogenous echogenecity,mixed , or anechogenic or hyperechogenic.

During hysteroscopy the endometrium was assessed by the surgeon . Including the thickness , appearance. If pathological lesion was revealed by hysteroscopy , its apperance was evaluated, especially vascularity and presence of necrosis and its location and size.

The statistical analysis used was correlation matrix , by corelating the suspicious cases of endometrial cancer by the usg and hysteroscopy and age factor with histopathologically confirmed carcinoma. Departments involved are the gynaecology oncology,pathology and anaesthesiology and surgical oncology.

RESULTS- There are 52 endometrial carcinoma patients detected among 96 patents which is about 54.16% .Mean age is 53.2 year with standard deviation 11.5 year.Median age of the patients having endometrial carcinoma is 53 year. So we have divided whole group into two groups ≤53 year age group and >53 year age group.

1. Correlation matrix observed that the correlation between ultrasound and hysteroscopy is 0.287 with 1% level of significance.
2. There is a weak correlation lies between endometrial carcinoma and ultrasound i.e., 0.258 with 5% level of significance.

I. INTRODUCTION –

Hysteroscopy and biopsy is the common diagnostic and therapeutic method of gynaecology. To evaluate the diagnostic accuracy of transvaginal sono graphy compared to hysteroscopy in detection of uterine pathology.

TVS is considered a simple examination with good accuracy for most uterine pathology . The uterus and its pathological lesions can be identified but there conflicting reports about its diagnostic accuracy. The cause of abnormal .

There are numerous causes of abnormal uterine bleeding , recently innumerated by the(1) Palm- Coien (Polyp: Adenomyosis:Leiomyoma:Malignancy And Hyperplasia;Coagulopathy; Ovulatory Dysfunction ;ENDOMETRIAL;IATROGENIC and not yet classified)NOMENCLATURE . The can be further categorised on the age of bleeding , from adolescene to menopause I.E PUBERTY menorhaegia to menopause

The investigations used for evaluation of aub include ultrasonography, hysteroscopy, endometrial biopsy sonohysterography, MRI. Transvaginal sonongraphy is considered the simplest examination procedures with good accuracy for evaluation of uterine cavity. The uterus and its pathologic lesions are visible but there are conflicting reports regarding its diagnostic accuracy. Hysteroscopy has and advantage of providing direct visualisation of the

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uterine cavity and endometrium, allowing the biopsy to be taken from suspected abnormities This technique has become the standard procedure for evaluating the cavity.Hysteroscopy may be useful in those cases where the sampling by pippele is inadequate . For diagnostic purposes office or out patient hysteroscopyis sufficient. (2)Study done bylukas etal on 255 patients. In 15 cases endometrial carcinoma was confirmed by biopsy.Of these malignancies were suspected based on the previous scans in 95 cases, intrauterine polyps were detected. The success rate of predicting polyps by ultrasound98%. In a study of 181 patients with suspected endometrial cancer , 119 underwent endometrial biopsy and 69 underwent hysteroscopic directed biopsy .they found the sensitivity (96%) and specificity(100%)of hysteroscopy to diagnose endometrial cancer and histopathology was 71.2 %. Hysteroscopy has accuracy in diagnosing endometrial cancer.Hysteroscopy cannot comment on the myometrial findings. Since the time of(2) Gimpleson and Rappold detected hysteroscopy combined with endometrial biopsy offers a diagnostic accuracy than dilation and curettage.Alone it is widely accepted as the gold standard in diagnosing endometrial pathology. (3)Garutti etal published in 2001 , aiming to estimate the accuracy of hysteroscopy in predicting endometrial pathology. Hysteroscopy showed a sensitivity , specificity , npv and ppv of 96.3% and 81.3% respectively , worst results was in estimating hyperplasia .Highest accuracy was in diagnosing polyp , worst results were in hyperplasia . authors reported that all the hysteroscopic assessment resulted frompoor visualisation of uterine cavity and under estimation or over estimation of irregularly shaped endometrium.

Transvaginal sonography is a mandatory investigation of a possible intrauterine pathology . (4)In a meta analysis of 35 studies including 5,892 women and using a 5mm threshold to define abnormal thickening , 96%(95% confidence interval) of women with endometrial cancer and 92%(95%CI, 90-93%%) of those with other endometrial lesions including cancer , polyp and atypical hyperplasia had an abnormal results. For a postmenopausal women with vaginalbleeding , her probability of cancer is 1%following a normal tvs. (5) Many studies show that despite high ultra sound sensitivities, there is 34% chances of finding a thin endometrium the potential risk of malignant polyp 0-4.8%. the risk is increases in postmenopausal , hypertension and large polyp with tamoxifen therapy the prevalence of malignant tumors and hyperplasia of endometrium is 3,2% in symptomatic women and 3.9% in asymptomatic women.czech (6)study shows an endometrial thickness of 5mm , intrauterine carcinomas are more reliably detected. by hysteroscopy, than by sonography. There is poor accuracy of transvaginal ultrasound for assesing endometrial carcinoma.A routine use of endometrial thickness measurements by ultrasound, does not seem to be effective tool for diagnosing endometrial cancer because of low diagnostic perfomance in symptomatic woman.

II. AIMS AND OBJECTIVE –

The aim of the study is to corelate the usg findings with the hysteroscopic and hps findings for all patients with abnormal uterine bleeding at our institute,and the accuracy of detection endometrial cancer, post imaging follwed by diagnostic hyteroscopic biopsy from 2016 to 2019 in suspected cases ofaub for endometrial cancer

Material methods– All patients nos 96 ,who presented to gynaecology opd at AHPGIC with abnormal bleeding, with thickened endometrium and sol in tvs were included . There details recorded were age, menopausal status and or bleeding irregularities or asymptomatic, underwent a diagnostic hysteroscopy. An effort was made to categorise the lesions as homogenous echogenecity,mixed , or anechogenic or hyperechogenic.During hysteroscopy the endometrium was assessed by the surgeon . Including the thickness , appearance. If pathological lesion was revealed by hysteroscopy , its apperance was evaluated, especially vascularity and presence of necrosis and its location and size.The statistical analysis used was correlation matrix.departments involved were gynaecololy oncology,pathology,anaesthesiology andsurgical oncology.

Descriptive statistics of DHEB data table -1

Age group (N)	96
Pre-menopausal	31 (32.29%)
Post-menopausal	65(67.71%)
Usg	
type of sol (N)	96
Sol -ve (n_1)	64 (68.81%)

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Sol +ve (n_2)	32 (31.19%)
Homogenous	07 (21.87%)
Mixed	18 (56.25%)
Anechoic	07 (21.87%)
Endometrial thickness (N)	96
<4mm	05 (5.21%)
4-10mm	64 (66.67%)
11-20mm	22 (22.91%)
>20mm	05 (5.21%)
Hysteroscopy	
Growth Status(N)	96
No	49 (51.04%)
Yes	47 (48.96%)
no change	18 (38.30%)
tan white	19 (40.42%)
Necrotic	10 (21.28%)
Hyperplasia Status(N)	96
No	31 (32.29%)
Yes	65 (67.71%)
smooth Status(N)	96
No	77 (80.21%)
Yes	19 (19.79%)
Normal Status(N)	96
No	67 (69.79%)
Yes	29 (30.21%)
Atrophy Status(N)	96
No	85 (88.54%)
Yes	11 (11.46%)
Irregular Status(N)	96
No	58 (60.42%)
Yes	38 (39.58%)
Histopathology (N)	96
Benign	45(44.79%)
Hyperplasia with atypia	08 (8.33%)
hyperplasia without atypia	07 (7.29%)
Polyp	03 (3.13%)
secretory endrometrium	06 (6.25%)
non secretory endrometrium	10 (10.42%)
Others	09 (9.37%)
malignant(endometrial carcinoma)	53 (55.21%)

Age Distribution table -2

Age	20-29	30-39	40-49	50-59	60-69	70+
N= 96	2(2.08%)	5 (5.20%)	25 (26.04%)	37(38.54%)	17 (17.70%)	10 (10.41%)

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Table -3

For Usg (Endometrial Thickness <4mm): 5 cases	
Hysteroscopy	
Growth Status(N)	5
No	4(80%)
Yes	1(20%)
no change	1
tan white	0
Necrotic	0
Hyperplasia Status(N)	5
No	5(100%)
Yes	0
smooth Status(N)	5
No	4(80%)
Yes	1(20%)
Normal Status(N)	5
No	5(100%)
Yes	0
Atrophy Status(N)	5
No	1(20%)
Yes	4(80%)
Irregular Status(N)	5
No	4(80%)
Yes	1(20%)
Histopathology (N)	5
Benign	
hyperplasia with atypia	0
hyperplasia without atypia	1(20%)
Polyp	0
secretory endrometrium	0
non secretory endrometrium	0
Others	1(20%)
malignant(endometrial carcinoma)	3(60%)

For Usg (Endometrial Thickness >4mm) 91 cases	
Hysteroscopy	
Growth Status(N)	91
No	45(49.45%)
Yes	46(50.55%)
no change	17(36.96%)
tan white	19(41.30%)
Necrotic	10(21.74%)
Hyperplasia Status(N)	91
No	26(28.57%)
Yes	65(71.43%0
smooth Status(N)	91
No	73(80.21%)
Yes	18(19.79%)
Normal Status(N)	91
No	74(81.31%)
Yes	17(18.69%)
Atrophy Status(N)	91
No	84(92.30%)

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Yes	07(7.70%)
Irregular Status(N)	91
No	55(60.43%)
Yes	36(39.57%)
Histopathology (N)	91
Benign	42(46.25%)
Hyperplasia with atypia	08(8.79%)
hyperplasia without atypia	06(6.59%)
Polyp	03(3.29%)
secretory endrometrium	06(6.59%)
non secretory endrometrium	10(11%)
Others	09(9.89%)
malignant(endometrial carcinoma)	49(53.85%)

Table No-4

Descriptive statistics table No- 5

Age group (N)	96
Pre-menopausal	31 (32.29%)
Post-menopausal	65(67.71%)
Usg	
type of sol (N)	96
Sol -ve (n_1)	64 (68.81%)
Sol +ve (n_2)	32 (31.19%)
Homogenous	07 (21.87%)
Mixed	18 (56.25%)
Anechoic	07 (21.87%)
Endometrial thickness (N)	96
<4mm	05 (5.21%)
4-10mm	64 (66.67%)
11-20mm	22 (22.91%)
>20mm	05 (5.21%)
Hysteroscopy	
Growth Status(N)	96
No	49 (51.04%)
Yes	47 (48.96%)
no change	18 (38.30%)
tan white	19 (40.42%)
Necrotic	10 (21.28%)
Hyperplasia Status(N)	96
No	31 (32.29%)
Yes	65 (67.71%)
smooth Status(N)	96
No	77 (80.21%)
Yes	19 (19.79%)
Normal Status(N)	96
No	67 (69.79%)
Yes	29 (30.21%)
Atrophy Status(N)	96
No	85 (88.54%)
Yes	11 (11.46%)
Irregular Status(N)	96
No	58 (60.42%)
Yes	38 (39.58%)

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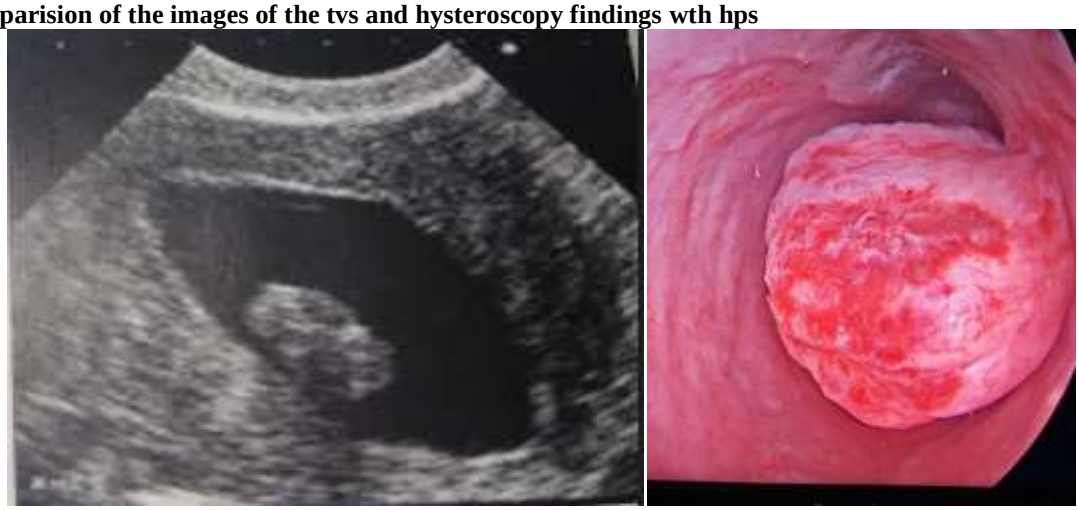
Comparision of the images of the tvs and hysteroscopy findings wth hps



Tvs shows polyp of mixed echogenecity,hysteroscopy reveal a smooth surface polp ,hps reveal benign polyp

Fig-1

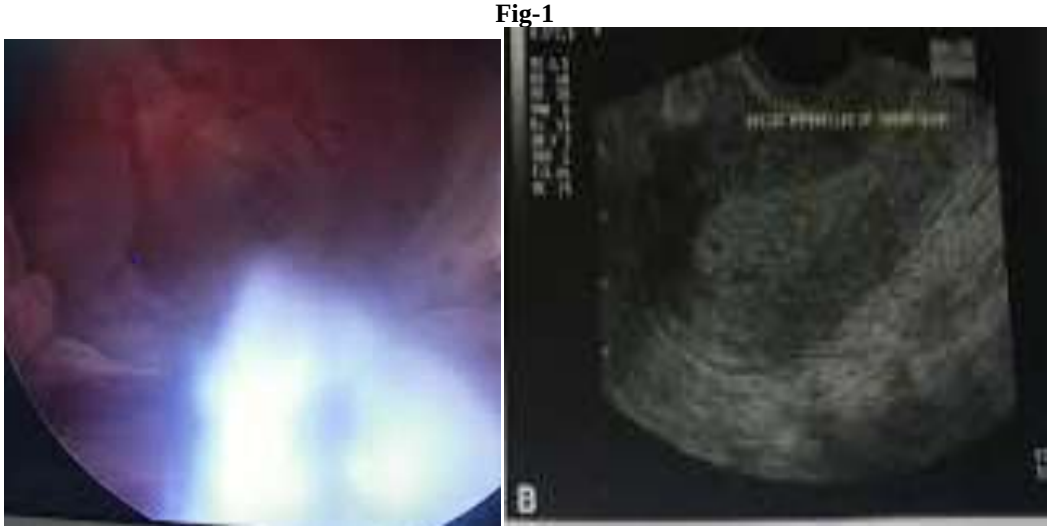


Fig-2 tvs image of hyperplastic endometrium,hysteroscopy shows hyperplasia ,smooth.hps confirmed as endometrial hyperplasia

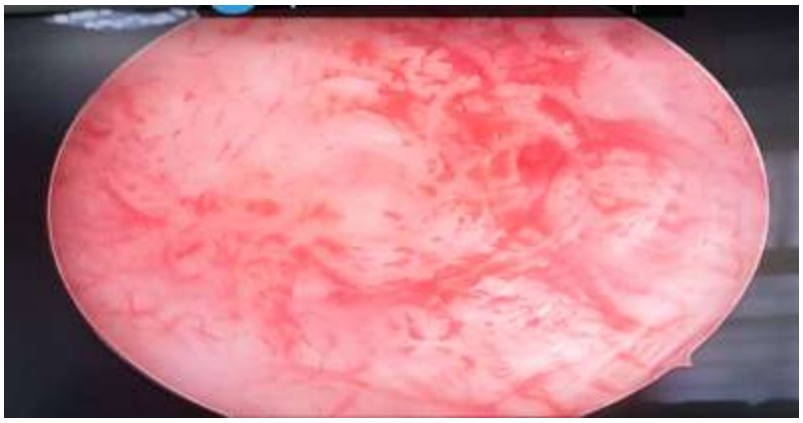


Fig -3 hysteroscopy increase vascularity,smoothsurface scanty endometrium.hps reveals atrophic

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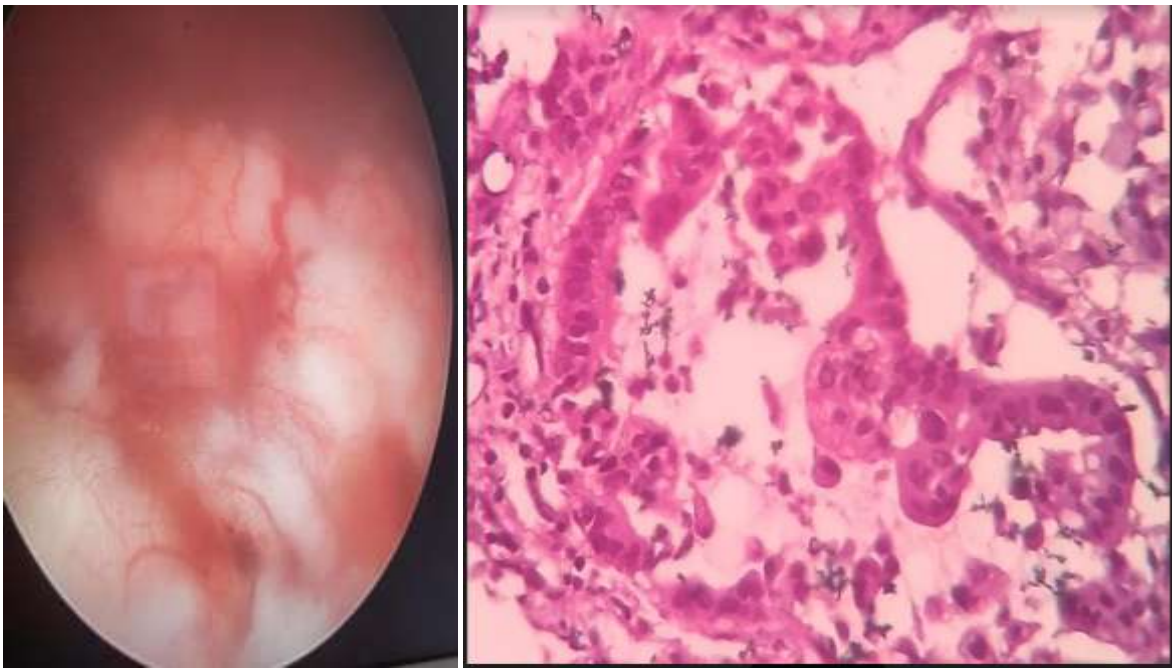

Fig-4 hysteroscopy shows hyperplasia with irregularity.Hps reveals hyperplasia with atypia

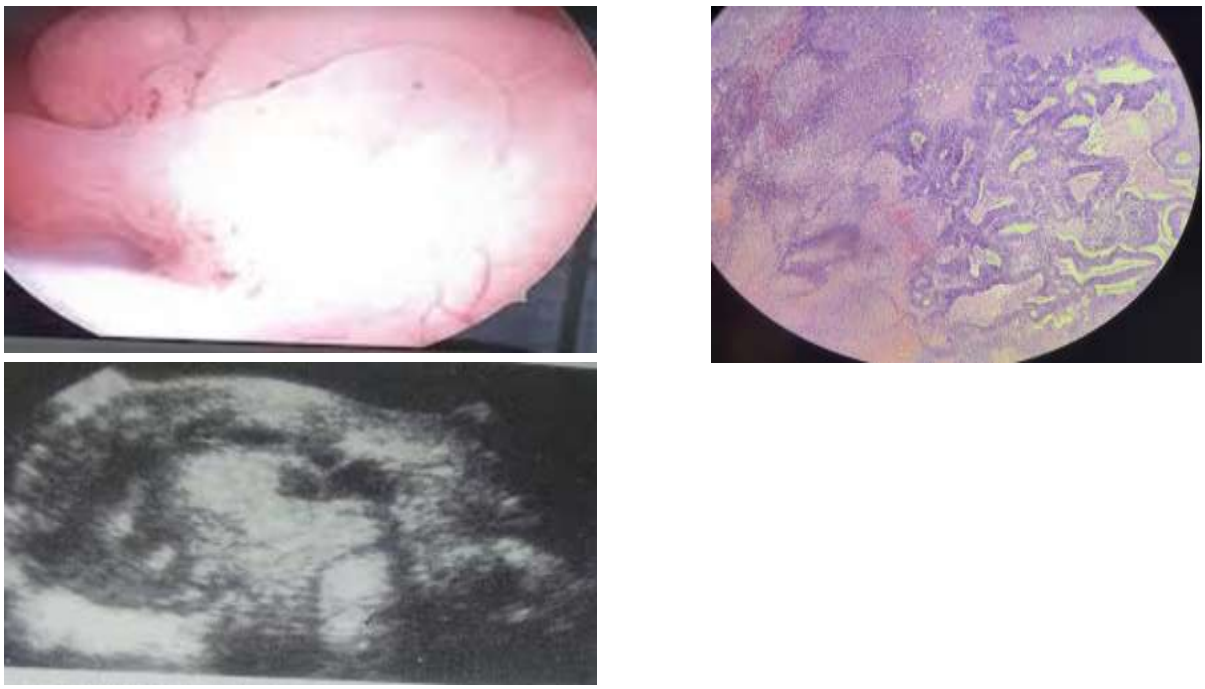

Fig-5 the hysteroscopy shows a growth with irregularity and usg shows growth of mixedechogenecity confirmed by hps.

III. RESULTS

C0 Relation Analysis Analysis Of Diagnostic Hysteroscopy And Usg In Cases Suspicious Endometrial Cancer And Confirmed By Hps As Carcinoma

There are 52 endometrial carcinoma patients detected among 96 patents which is about 54.16% .

Mean age is 53.2 year with standard deviation 11.5 year.

Median age of the patients having endometrial carcinoma is 53 year. so we can divide whole group

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into two groups ≤53 year age group and >53 year age group.

From the above correlation matrix it can be clearly observed that the correlation between ultrasound and hysteroscopy is 0.287 with 1% level of significance.

There is a weak correlation lies between endometrial carcinoma and ultrasound i.e., 0.258 with 5% level of significance.

Correlation matrix table no-6

		benign	endometrial carcinoma	age	menopausal bleeding	Hysteroscopy	Ultrasound
Benign	Pearson Correlation	1	-1.000**	-.251*	-.214*	-.441**	-.258*
	Sig. (p-value)		.000	.014	.036	.000	.011
endometrial carcinoma	Pearson Correlation	-1.000**	1	.251*	.214*	.441**	.258*
	Sig. (p-value)	.000		.014	.036	.000	.011
Age	Pearson Correlation	-.251*	.251*	1	.601**	.229*	.105
	Sig. (p-value)	.014	.014		.000	.025	.309
menopausal bleeding	Pearson Correlation	-.214*	.214*	.601**	1	.275**	.209*
	Sig. (p-value)	.036	.036	.000		.007	.041
Hysteroscopy	Pearson Correlation	-.441**	.441**	.229*	.275**	1	.287**
	Sig. (p-value)	.000	.000	.025	.007		.005
Ultrasound	Pearson Correlation	-.258*	.258*	.105	.209*	.287**	1
	Sig. (p-value)	.011	.011	.309	.041	.005	
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

From the above correlation matrix it can be clearly observed that the correlation between ultrasound and hysteroscopy is 0.287 with 1% level of significance.There is a weak correlation lies between endometrial carcinoma and ultrasound i.e., 0.258 with 5% level of significance.

The above correlation matrix shows that correlation of benign leson histopathologically confirmed with hysteroscopy is -.441, is signicant at all levelof 1% and 5%.the correlation between usg and benign lesion confirmed histopathologically is .-.258 is significant at1%.Thus hysteroscopy has a higher diagnostic accuracy than usg in detecting benign lesions

The correlation of aub or pmb with endometrial cancer is .214 is significant a1 % level.The correlation of aub with hysteroscopy is .275 is significant at all levels of 1%and 5%.whereas the correlation of usg with hysteroscopy is.029 is signicant at 5% level.. .

IV. CONCLUSION-

Thus we conclude from our correlation matrix analysis ,that suspicious cases of abnormal bleeding more than 53 yrs with standard deviation of 11.5 yrs with suspicious usg features for malignancy must do a hysteroscopy also to exclude malignancy. As the our study reveals that there is a statistical significance of usg followed by hysteroscopy with in detection of endometrial cancer in suspicious cases.Thus both usg and hdisgnostic hysteroscopy are complementary in detection of endometrial cancer, in aub.

ABBREVIATIONS – AUB – ABNORMAL UTERINE BLEEDING
TVS –TRANSVAGINAL SONOGRAPHY
DHEB-DIAGNOSTIC HYSTEROSCOPY AND BIOPSY
HPS- HISTOPATHOLOGY
SOL – SPACE OCCUPYING LESION

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