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POST MENOPAUSAL ENDOMETRIUM COMPARISON OF TRANSVAGINAL ULTRASOUND, HYSTEROSCOPY WITH FRACTIONAL CURETTAGE - A RESEARCH ANALYSIS

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HOW TO CITE THIS ARTICLE:

Anoop Sreevalsan, Renuka, Kavitha D, Vasantha N. Subbiah "Post Menopausal Endometrium Comparison of Transvaginal Ultrasound, Hysteroscopy with Fractional Curettage - A Research Analysis". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 03, January 20; Page: 589-596, DOI: 10.14260/jemds/2014/1870

ABSTRACT: Postmenopausal endometrium has fascinated all of us gynecologists. The investigation of it has for long been the fractional curettage which has been accepted as the gold standard. Newer less invasive methods like transvaginal ultrasound and hysteroscopy have now been accepted. We compared all these three modalities to see the sensitivity, specificity, positive and negative predictive values. We found that transvaginal ultrasound could be used as the primary modality of study with Hysteroscopic directed biopsy as the next investigation.

KEYWORDS: postmenopausal endometrium, Transvaginal ultrasound, hysteroscopy, fractional curettage.

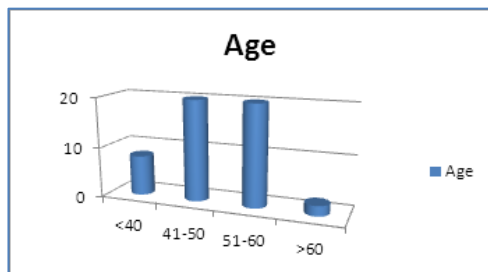
INTRODUCTION: Postmenopausal endometrium has fascinated gynecologists since time immemorial. How does a uterus that has been periodically menstruating since menarche suddenly stop its function and how do changes occur in it. With postmenopausal bleeding occurring occasionally due to various causes and whose number increasing due to increasing use of hormone replacement therapy, treatment of breast carcinoma with tamoxifen, osteoporosis etc. The association of postmenopausal bleeding in endometrial carcinoma is documented. Endometrial carcinoma incidence is going up day by day with increasing longevity; we need to know both about normal and abnormal endometrium. The gold standard investigation is fractional curettage with cervical biopsy. But with an increasing trend worldwide for non-invasive and less invasive and more targeted investigations, the development of transvaginal ultrasound and Hysteroscopic biopsy has developed.¹⁻²¹ This study aims to analyse the efficacy of each method.

MATERIALS & METHODS: The institutional permission was obtained before start of the study. Any postmenopausal women admitted to the hospital were included for the study after taking an informed consent. Inclusion criteria were women who were postmenopausal. Exclusion criteria were [1] women who had a prior hysterectomy [2] were on hormone replacement therapy & [3] were on tamoxifen for treating or preventing relapse of breast cancer. All women who were included for the study underwent basic and routine tests. They then had a transvaginal ultrasound done to see for endometrial thickness. A 7.5 MHz probe was used and the uterus was scanned in both sagittal and coronal planes. The endometrial thickness was then measured in the longitudinal plane to avoid oblique semi coronal views which may increase measurements.³ Then under anesthesia they had a Hysteroscopic inspection of the uterus done following which a fractional curettage was performed.^{1, 7, 10-12, 18-20} These specimens were then sent for histopathological examination. The patients then underwent a hysterectomy if indicated and the histopathological examination was compared with the other investigations.^{17, 21} The results were collated and analyzed.

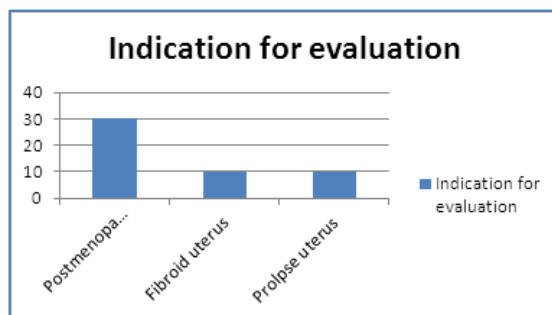
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RESULTS:

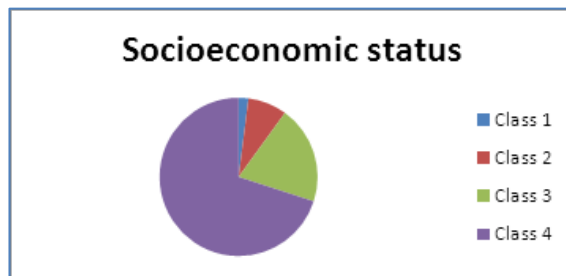
Age: Most patients were in the 50-60 age groups which is consistent with the age of menopause.



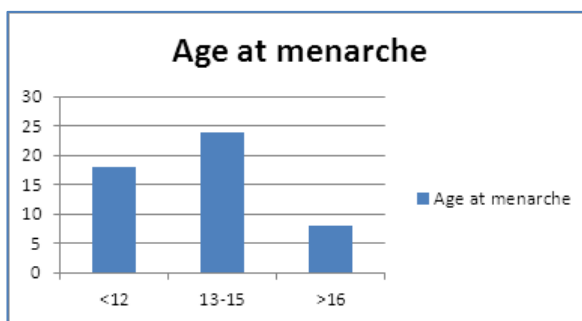
Indication for evaluation: Most had the evaluation done for postmenopausal bleeding. This is due to the fact that a patient with postmenopausal bleeding would immediately present for treatment.



Socio-economic class: Most belonged to the poorer socioeconomic class as our hospital caters to the poorer sections of the community.

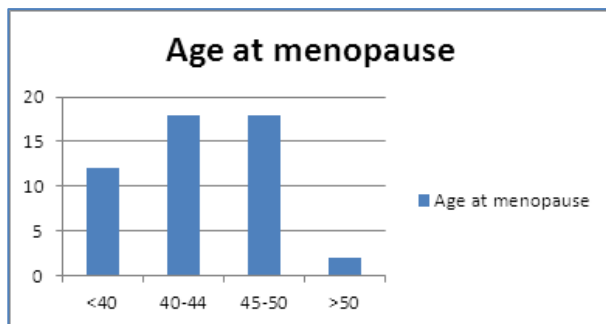


Age at menarche: Most had attained menarche by 15 years of age.

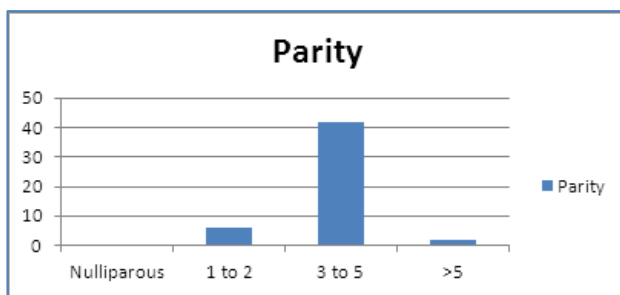


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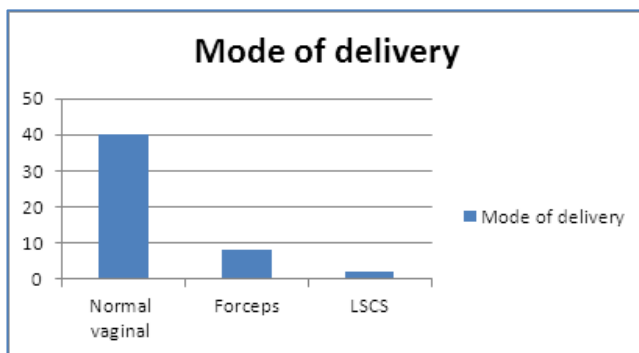
Age at menopause: Most had attained menopause by 50 years of age.



Parity: Most were multiparous.



Mode of delivery: Most had normal vaginal delivery

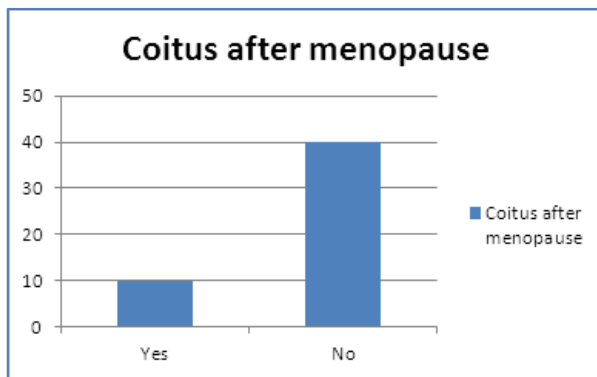


Sterilization: Most had not undergone sterilization

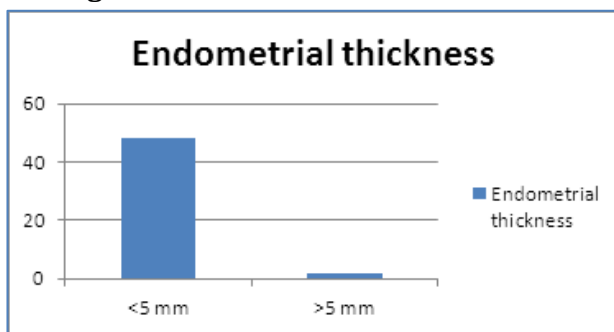


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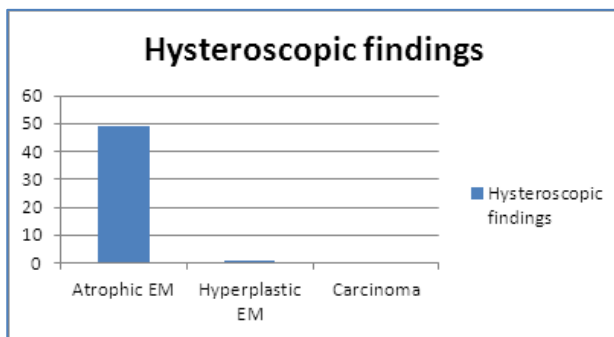
Coital history: Most had no coitus after menopause.



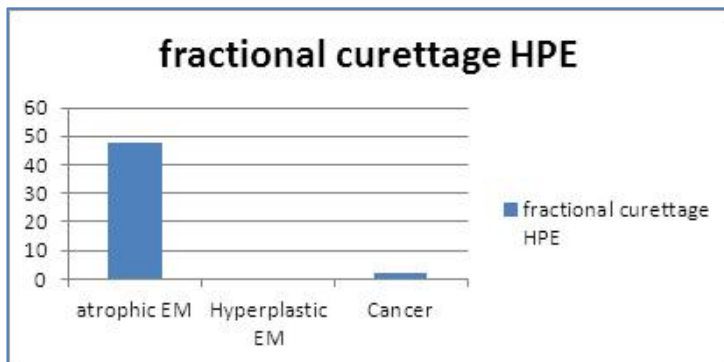
Transvaginal ultrasound findings



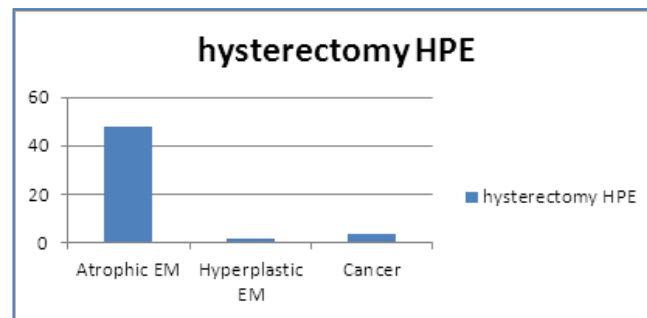
Hysteroscopic findings



Histopathological findings following fractional curettage:



Histopathological findings following hysterectomy



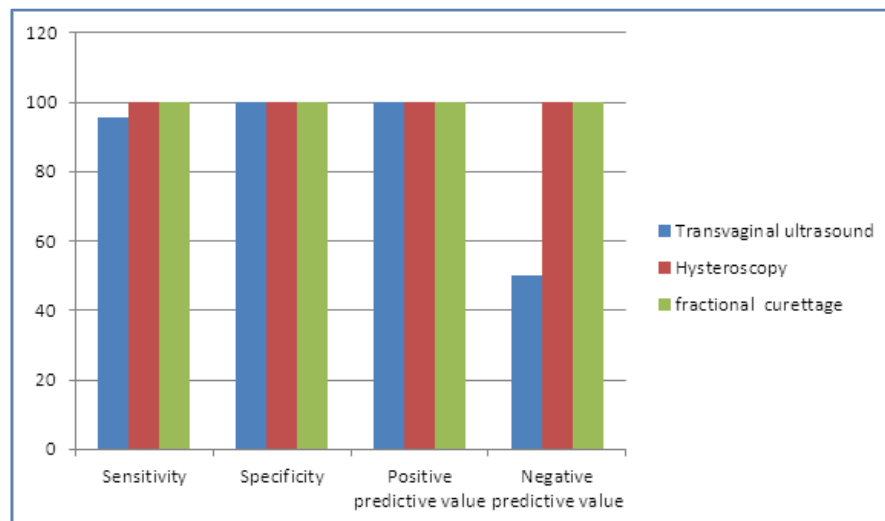
DISCUSSION: The specificity, sensitivity, positive and negative predictive values were calculated using standard statistical methods.²²

Sensitivity: defined as the ability of a test to identify correctly all those who have the disease.

Specificity: defined as the ability of a test to identify correctly those who do not have the disease.

Positive predictive value: indicates the probability that a patient with a positive result has, in fact, the disease in question.

Negative predictive value: indicates the probability that a patient with a negative result does not have the disease in question.



As we can see from this table, all three tests have equal specificity rates. Therefore they correctly exclude those who do not have the disease. As to sensitivity both hysteroscopy and HPE following # curettage are equal while transvaginal ultrasound is a little lower at 95.8%. So transvaginal ultrasound scores slightly lower at identifying correctly those who have the disease.

For years Dilatation & Curettage has been the gold standard for evaluation in its expanded form of Fractional Curettage. Gimpelson & Rappold [1988] showed that curettage alone may miss lesions such as polyps and localized cancers in up to 25% of cases²³.

ORIGINAL ARTICLE

Study	Fleischer [1986] ³	Goldstein et al [1990] ^{3,5}	Alcazar & Laparte [1996] ²⁷	Cacciature et al [1994] ³⁰	Salmaggi et al [1997] ²⁴	Haller et al [1996] ²⁶	Gupta et al [1996] ²⁸	Our study
Specificity			60.8	45.5	72	4.5	77	100
Sensitivity			100	95.7	90.9	95.8	83	95.8
Positive predictive value		35	35.7	64.7	90.9		54	100
Negative predictive value	100	100	100					50
Transvaginal ultrasound								

Our sensitivity matches with other studies. Specificity varies among the various studies quoted. Same is the case with both positive predictive and negative predictive value. This may be due to the fact that most studies concentrated on postmenopausal bleeding unlike ours wherein we took even those with no bleeding.

Study	Alcazar [1996] ²⁷	Cacciature et al [1994] ³⁰	Salmaggi et al [1997] ²⁴	Torrejon et al [1997] ²⁵	Haller et al [1996] ²⁶	Karlsson et al [1994] ²⁹	Our study
Specificity	89.4	91.7	92.8	99.4	93.9	88	100
Sensitivity	100	86.9	96.7	100	95.3	97	100
Positive predictive value	71.4		96.8				100
Negative predictive value	100						100
Hysteroscopy							

Our study also compares favorably with other studies.

All these screening tests have equal positive predictive values while transvaginal ultrasound has scored lower in the negative predictive value than the other two. Therefore we can use transvaginal USG to initially screen all patients and then use hysteroscopy to rescreen only those positive patients thereby decreasing material costs as well as attendant risks to the patients.

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ORIGINAL ARTICLE

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ORIGINAL ARTICLE

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Date of Submission: 26/12/2013.
Date of Peer Review: 27/12/2013.
Date of Acceptance: 09/01/2014.
Date of Publishing: 14/01/2014.