

**COLOUR DOPPLER TRANSVAGINAL
SONOGRAPHY VERSUS HYSTEROSCOPY
GUIDED ENDOMETRIAL BIOPSY IN
CASES OF POSTMENOPAUSAL BLEEDING**

Thesis

*Submitted for partial fulfillment of the master degree
in Obstetrics and Gynaecology*

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List of Abbreviations

AUB.....	Abnormal uterine bleeding
APD.....	Anteroposterior
AVF.....	Anteverted anteflexed
CBC	Complete blood count
CCU.....	Camera control unit
COCs.....	Combined oral contraceptives
CW	Continuous wave technique
D/A.....	Diastolic to average
D & C.....	Dilatation and curettage
D.M.....	Diabetes mellitus
DVT.....	Deep venous thrombosis
EC.....	Endometrial carcinoma
ET.....	Endometrial thickness
GRIN.....	Graded refractory index
HNPCC.....	Hereditary nonpolyposis colorectal cancer
H N.....	Hypertension
HRT.....	Hormonal replacement therapy
HSG.....	Hysterosalpingogram
IUCD.....	Intrauterine contraceptive device
L.R.	Likelihood ratio
LD.....	Longitudinal
O.D.....	Outside diameter
PID.....	Pelvic inflammatory disease
PI.....	Pulsatility index
PMB.....	Postmenopausal bleeding
PW.....	Pulsed wave technique
RI.....	Resistance index
RVF.....	Retroverted retroflexed
SD.....	Standard deviation
S/D.....	Systolic diastolic
TAS.....	Transabdominal sonography

TD.....	Transverse
TVS.....	Transvaginal sonography
TVUS.....	Transvaginal ultrasound
USPTF.....	US Preventive task force
VCR.....	Video cassette recorder

Continued

II

إقرأ باسم ربك الذى خلق {1} خلق الإنسان
من علق {2} إقرأ وربك الأكرم {3} الذى
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Introduction

INTRODUCTION

Menstruation is the physiological shedding of the endometrium of the primates, accompanied by uterine bleeding that occurs at approximately monthly interval from the menarche to the menopause. The menarche usually occurs between the ages of 11- 14 years, However, the menopause usually occurs at 45- 55 years of age (*Butler, 1997*).

Postmenopausal bleeding is a serious complaint as it is caused by a malignancy in 30% - 50% of cases in which there have either continuous or repeated episodes of bleeding (*Ross, 1988*). Fractional curettage was always the ultimate investigation to exclude endometrial carcinoma and diagnose other pathologies (*Gusberg, 1988*). This procedure has two main drawbacks: first it is an invasive one and has to be done under general anaesthesia, so it cannot be applied repeatedly in high risk patients and those with recurrent bleeding. Second it may miss lesions such as small polyps or small endometrial carcinoma in not less than 10% of cases (*Renaer et al., 1983*).

Thus, it would be valuable to develop other non-invasive methods for the early diagnosis of endometrial abnormalities, reducing the need for hospital curettage. Hysteroscopy allows direct visualization of the uterine cavity without cervical dilatation and therefore, usually without anaesthesia, thus it could be used as an office technique in the evaluation of endometrial disorders (*Gimpelson, 1992*).

Transvaginal ultrasound provides an excellent images and therefore more information especially in obese patients. However, colour Doppler has also proved to be valid in detection and prognosis of suspected endometrial lesions, by analyzing hemodynamic parameters at the large uterine blood vessels level and by examining the representability and characteristics of vascularization on the myometrium and at the endometrial level, however long-term follow up is required (*Badawy & Abu-Elata 2003*).

Measurement of endometrial thickness using transvaginal ultrasound is helpful in diagnosis of endometrial pathology, including endometrial cancer (*Grandberg et al., 1991*) and in assessment of myometrial invasion (*Cacciatore et al., 1994*) Thickness >5 mm prompt further testing (*Saha TK et al., 2004*).

The presence of newly formed and densely arranged myometrial and endometrial blood vessels with low blood flow resistance have a positive predictive value in detection of endometrial pathological changes. Resistance index and pulsatility index have been proved to be sensitive to the hemodynamic parameters in examination of uterine circulation, for being sensitive to the minimal changes of the peripheral resistance of blood flow (*Lehotska et al., 1999*).

Transvaginal ultrasound with colour Doppler sonography as sensitive, specific and non-invasive method has significant place in the diagnostic procedure for evaluation of

abnormal uterine bleeding in perimenopausal and postmenopausal women. Colour Doppler sonography can help in differentiating benign from malignant endometrial changes, and in deciding on the most efficient therapeutical regime (*Svetlana et al., 2004*).