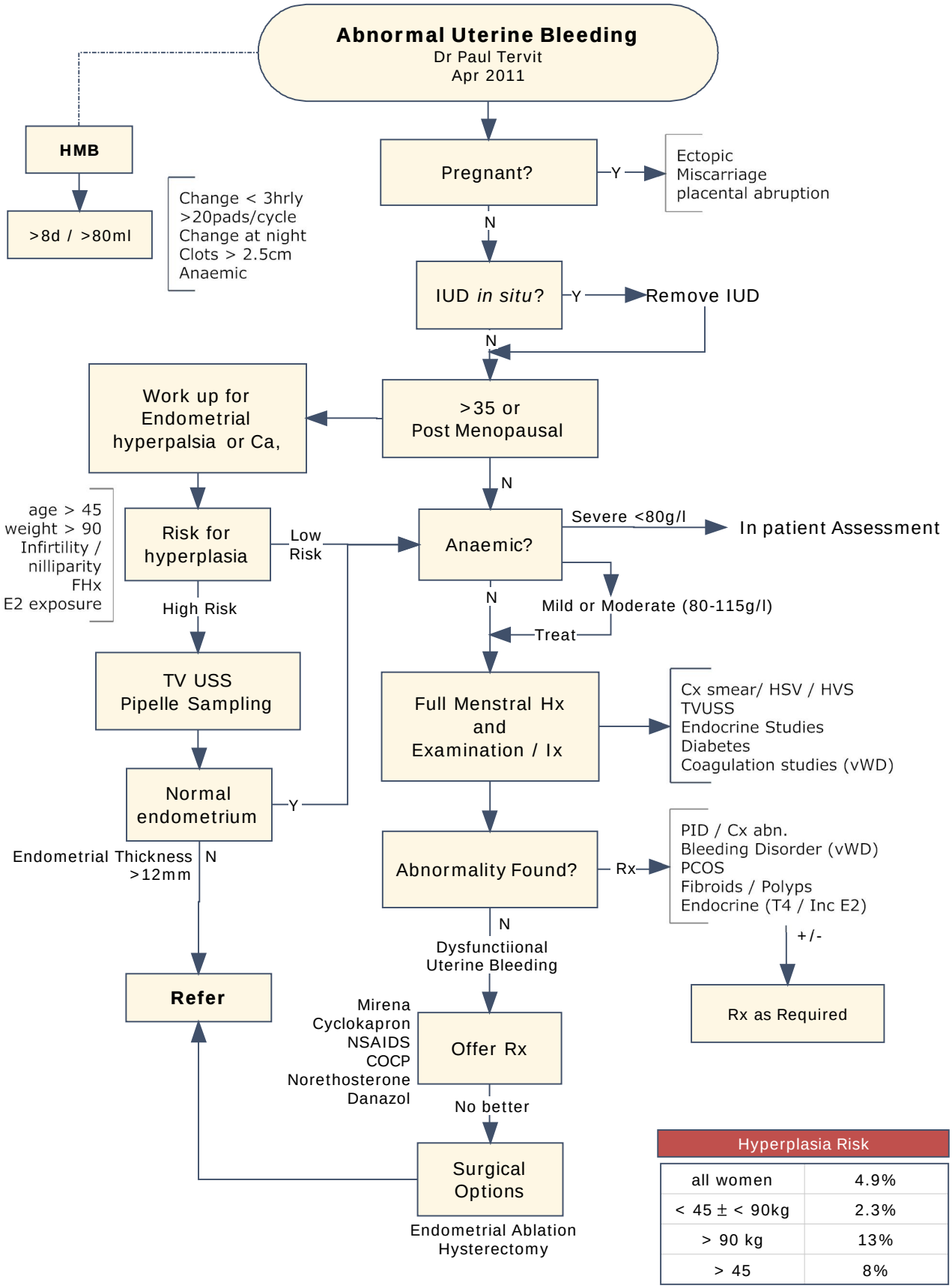

Hyperplasia Risk	
all women	4.9%
< 45 ± < 90kg	2.3%
> 90 kg	13%
> 45	8%

Notes

Endometrial hyperplasia with atypia may progress (if untreated) to endometrial carcinoma in 20-75% of cases over a 13 year period

It is estimated that 20% of women with regular HMB will require endometrial assessment because of increased risk factors

if endometrial thickness on transvaginal ultrasound > 12mm then an endometrial sample should be taken.

Fifty percent of women > 90kg, who have an endometrial thickness > 12mm on TVS, have endometrial hyperplasia. Less than 1% of women < 90kg, who have an endometrial thickness <12mm have endometrial hyperplasia

COMPARATIVE TABLE OF MEDICAL THERAPY FOR THE TREATMENT OF HEAVY MENSTRUAL BLEEDING

Drug	Mean reduction in blood loss (%)	Women Benefiting (% < 80mls/cycle)
LNG IUS	94	100
PO P4 (5-25d)	87	86
Tranexamic Acid	47	56
NSAIDS	29	51
OC Pill	43	50
Danazol	50	76
PO P4 (Luteal Phase)	-4	18

Dimitraki, M., P. Tsikouras, et al. (2011). "**Clinical evaluation of women with PMB. Is it always necessary an endometrial biopsy to be performed? A review of the literature**." Arch Gynecol Obstet **283**(2): 261-266.

BACKGROUND: Endometrial carcinoma is the most distressing cause of abnormal vaginal bleeding. The intention of clinical management in the case of postmenopausal bleeding is to achieve an accurate diagnosis without overinvestigation. METHOD: We studied the available literature on the diagnostic evaluation of postmenopausal women with vaginal bleeding, accentuating the most important aspects on this topic: the accuracy of sonography and endometrial biopsy in predicting endometrial hyperplasia and endometrial carcinoma. RESULTS: The accuracy of the above tests in predicting endometrial hyperplasia and endometrial carcinoma is a subject of continuing debate. Muomicronreover, in the last decades, there has been an explosion of publications indicating that ultrasound may be useful in predicting endometrial pathology. CONCLUSION: Since advanced endometrial carcinoma has been known to occur in cases without noticeable endometrial thickness on ultrasound, the clinician should beware of the diagnostic evaluation of postmenopausal women with vaginal bleeding.

Dreisler, E., S. S. Sorensen, et al. (2009). "**Value of endometrial thickness measurement for diagnosing focal intrauterine pathology in women without abnormal uterine bleeding**." Ultrasound Obstet Gynecol **33**(3): 344-348.

OBJECTIVE: To assess the diagnostic value of transvaginal sonographic (TVS) measurement of endometrial thickness for diagnosing focal intrauterine pathology in women without abnormal uterine bleeding (AUB). METHODS: A random selection from the Danish Civil Registration System was made: 1660 women aged 20-74 years were invited to participate and 686 women were eligible and accepted inclusion (429 pre- and 257 postmenopausal). The women underwent TVS measurement of endometrial thickness and saline contrast sonohysterography (SCSH). Hysteroscopic resection with histopathology (gold standard) was performed when focal intrauterine pathology was suspected at SCSH. We excluded women with AUB (n = 237), failure of SCSH (n = 50), a scan that was not in the follicular phase (n = 11), hysteroscopy contraindicated (n = 2), and users of sequential hormone therapy (n = 9) or selective estrogen receptor modulators (n = 2). Thus, 375 women without AUB were included (217 pre- and 158 postmenopausal). Receiver-operating characteristics (ROC) curves for endometrial thickness and focal lesion were analyzed. RESULTS: Focal intrauterine pathology was confirmed in 41 women (35 with polyps, five with submucosal myomas and one with polypoidal growing cancer). For premenopausal women, the area under the ROC curve (AUC) was 0.79 (95% CI, 0.68-0.89) and for postmenopausal women it was 0.84 (95% CI, 0.76-0.92). For premenopausal women, the best negative likelihood ratio (LR- = 0.11) was obtained at an endometrial thickness of 5.2 mm, with a negative predictive value (NPV) of 99% and a positive predictive value (PPV) of 10%. For postmenopausal women the best LR- (0.08) was obtained at an endometrial thickness of 2.8 mm, with a NPV of 99% and a PPV of 26%. CONCLUSIONS: In women without AUB, TVS measurement of endometrial thickness is a poor diagnostic test, but is apparently efficacious in excluding focal intrauterine pathology, especially in postmenopausal women. The 4-5-mm threshold conventionally used to exclude endometrial malignancy in women with postmenopausal bleeding is not transferable to women without AUB for excluding focal intrauterine pathology.

Raouf, S. A., P. Gupta, et al. (2011). "**Endometrial thickness for invasive investigations in women with postmenopausal bleeding**." Climacteric **14**(1): 117-120.

OBJECTIVE: To determine the prevalence of endometrial hyperplasia and endometrial cancer in postmenopausal women with endometrial thickness of 4.1-8 mm on transvaginal ultrasound scan. DESIGN: Prospective observational study carried out in the Heart of England NHS Trust Teaching Hospital in the West Midlands, UK, in a population of 58 women with postmenopausal bleeding. METHOD: Prospective analysis of all women referred to the Rapid Access Clinic in the Heart of England Hospital with a history of postmenopausal bleeding over a 12-month period (April 2007-April 2008). Endometrial histology was taken as the final diagnosis. The main outcome measure was endometrial histology in women with postmenopausal bleeding with endometrial thickness of 4.1-8 mm. RESULTS: All women (n = 58) diagnosed with endometrial thickness of 4.1-8 mm on transvaginal sonography were included in the analysis. Pipelle endometrial biopsy could only be performed in 22 women (37.9%). Hysteroscopy was performed in 45 women (77.5%). Out of these, a histological diagnosis was available in 28 women (62.2%). In the remaining 17 women, the endometrium was observed as atrophic on hysteroscopy. In these 17 cases, either no or insufficient endometrial sample was obtained. In total, two (3.4%) women were diagnosed with complex endometrial hyperplasia and two (3.4%) women were diagnosed with endometrial carcinoma. CONCLUSION: There was a significant prevalence of endometrial hyperplasia and endometrial cancer in postmenopausal women with a history of postmenopausal bleeding and who had endometrial thickness of 4.1-8 mm. Therefore, the current recommendation of histological assessment on all women with endometrial thickness >4 mm should remain unchanged.

Skaznik-Wikiel, M. E., J. E. Jelovsek, et al. (2010). "**Accuracy of endometrial thickness in detecting benign endometrial pathology in postmenopausal women**." Menopause **17**(1): 104-108.

OBJECTIVE: The aim of this study was to determine whether an endometrial thickness less than 5 mm on transvaginal ultrasound (TVUS) is sufficient to exclude benign endometrial lesions in postmenopausal women with bleeding and to determine a cutoff value below which benign endometrial pathology could be ruled out. METHODS: Electronic medical records of consecutive postmenopausal women presenting with vaginal bleeding suspicious for benign pathology were reviewed between September 2002 and December 2007. All women underwent TVUS with endometrial stripe measurement followed by saline infusion sonography (SIS). Accuracy of endometrial echo thickness for detecting intracavitary masses was compared with the reference standard of SIS. A receiver operating characteristic curve was constructed to calculate whether other cutoff values would be more accurate than 5 mm in detecting benign endometrial masses. RESULTS: A total of 1,097 women were referred during the study period; 135 met the inclusion criteria and underwent TVUS followed by SIS. The endometrial echo was less than 5 mm in 43% and 5 mm or greater in 57%. The overall prevalence of polyps or fibroids was 50%. Using an endometrial echo cutoff less than 5 mm, sensitivity was 76% (95% CI, 65-85), specificity was 63% (95% CI, 51-73), positive predictive value was 67%, and negative predictive value was 72%. The area under the receiver operating characteristic curve for detection of benign masses was 0.79 (95% CI, 0.72-0.87). We were unable to determine a cutoff value below which benign endometrial pathology could be excluded. CONCLUSIONS: With an endometrial thickness cutoff of 5 mm a considerable amount of benign endometrial pathology in postmenopausal women with bleeding is missed, and SIS or hysteroscopy may be warranted.

Timmermans, A., B. C. Opmeer, et al. (2010). "**Endometrial thickness measurement for detecting endometrial cancer in women with postmenopausal bleeding: a systematic review and meta-analysis**." Obstet Gynecol **116**(1): 160-167.

OBJECTIVE: To estimate the accuracy of endometrial thickness measurement in the detection of endometrial cancer among women with postmenopausal bleeding with individual patient data using different meta-analytic strategies. DATA SOURCES: Original data sets of studies detected after reviewing the included studies of three previous reviews on this subject. An additional literature search of published articles using MEDLINE databases was preformed from January 2000 to December 2006 to identify articles reporting on endometrial carcinoma and sonographic endometrial thickness measurement in women with postmenopausal bleeding. METHODS OF STUDY SELECTION: We identified 90 studies reporting on endometrial thickness measurements and endometrial carcinoma in women with postmenopausal bleeding. TABULATION, INTEGRATION, AND RESULTS: We contacted 79 primary investigators to obtain the individual patient data of their reported studies, of which 13 could provide data. Data on 2,896 patients, of which 259 had carcinoma, were included. Several approaches were used in the analyses of the acquired data. First, we performed receiver operator characteristics (ROC) analysis per study, resulting in a summary area under the ROC curve (AUC) calculated as a weighted mean of AUCs from original studies. Second, individual patient data were pooled and analyzed with ROC analyses irrespective of study with standardization of distributional differences across studies using multiples of the median and by random effects logistic regression. Finally, we also used a two-stage procedure, calculating sensitivities and specificities for each study and using the bivariate random effects model to estimate summary estimates for diagnostic accuracy. This resulted in rather comparable ROC curves with AUCs varying between 0.82 and 0.84 and summary estimates for sensitivity and specificity located along these curves. These curves indicated a lower AUC than previously reported meta-analyses using conventional techniques. CONCLUSION: Previous meta-analyses on endometrial thickness measurement probably have overestimated its diagnostic accuracy in the detection of endometrial carcinoma. We advise the use of cutoff level of 3 mm for exclusion of endometrial carcinoma in women with postmenopausal bleeding.

van Hanegem, N., M. C. Breijer, et al. (2011). "**Diagnostic evaluation of the endometrium in postmenopausal bleeding: an evidence-based approach**." Maturitas **68**(2): 155-164.

Postmenopausal bleeding (PMB) is a common complaint in general gynecological practice. Women with PMB have around a 10% chance of having endometrial carcinoma and therefore PMB always needs further evaluation. This article summarizes the reviews on the subject and provides an overview of the use of diagnostic tools in patients with PMB. Four types of diagnostic test are described: sonographic measurement of endometrial thickness, endometrial sampling, hysteroscopy and saline infusion sonography. All four have been independently shown to be accurate in excluding endometrial cancer. However, neither in systematic reviews nor in international guidelines is consensus found regarding the sequence in which these methods should be employed in women with PMB. For measurement of endometrial thickness in symptomatic women, a cut-off value of 3mm is recommended, but the cost-effectiveness of this strategy has yet to be shown. Research should now focus on the incorporation of individual patient characteristics and pre-test probabilities for cancer in algorithms for the investigation of PMB, and the most cost-effective sequenced combination of the four types of test.