Evidence-Based Answer

In a woman with postmenopausal bleeding being evaluated for endometrial carcinoma, an endometrial thickness of ≤4 mm by transvaginal ultrasound (TVU) has a negative predictive value exceeding 99%. (SOR: A, based on meta-analysis from multiple RCTs.) When the endometrial thickness is >4 mm, follow-up endometrial sampling is recommended to exclude endometrial carcinoma. (SOR: C, based on expert opinion.)

Vaginal bleeding is the presenting sign in >90% of postmenopausal women with endometrial cancer; and women with postmenopausal bleeding have a risk of endometrial carcinoma ranging from 3% to 10%.1 TVU has been advocated to assess the endometrial thickness in symptomatic postmenopausal women to determine if endometrial tissue sampling is required.

A meta-analysis of 35 prospective studies (n=5,892, mean age 61, 94% with symptomatic bleeding) evaluated the accuracy of TVU in detection of endometrial disease. Studies measuring endometrial thickness prior to endometrial sampling were included. Asymptomatic women, those on tamoxifen, and women with known endometrial cancer or polyps were excluded from studies. Histologic evaluation of endometrial tissue was the reference standard for detection of malignancy.

Using 5 mm as the endometrial stripe threshold, the sensitivity for endometrial carcinoma was 96% (95% CI, 94–98) and specificity was 61% (95% CI, 59–63), generating a positive likelihood ratio (LR+) of 3.1 and a negative likelihood ratio (LR−) of 0.06. At 3 mm, the sensitivity increased to 100% (95% CI, 99–100) and specificity decreased to 38% (95% CI, 32–45), generating an LR+ of 1.6 and an LR− of 0. Using these results, if a patient presenting with vaginal bleeding had a 10% chance of having uterine cancer, a TVU with a stripe <5 mm would generate a posttest probability of disease of 0.6%.2

Another meta-analysis reviewed 57 studies (n=9,031) to determine the accuracy of endometrial thickness measurements in the diagnosis of endometrial carcinoma. Using 4- and 5-mm cutoffs in this study, a negative TVU reduced the posttest probability of endometrial carcinoma to 1.2% (95% CI, 0.4–2.9) and 2.3% (95% CI, 1.2–4.8), respectively. A positive test result increased posttest probabilities of endometrial carcinoma to 24.2% (95% CI, 19.7–29.2) and 26.1% (95% CI, 21.1–31.6), respectively. The authors cautioned that most of these studies had poor methodological descriptions or other limitations, making it difficult to judge the reliability of the combined results.3

The American College of Obstetricians and Gynecologists recommends evaluation of postmenopausal bleeding with either endometrial sampling or TVU. According to the guidelines, if a TVU demonstrates an endometrial thickness ≤4 mm, endometrial sampling is not required. An inadequate TVU, endometrial thickness >4 mm, or recurrent bleeding (despite normal TVU) should prompt further evaluation to rule out malignancy.4

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The opinions and assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Medical Department of the US Army or the US Army Service at large.

References: