Introduction/Background With the shift in demographics towards an ageing, increasingly obese population, we will see a rise in estrogen-dependent endometrial pathology, including endometrial cancer. The first goal of the study was to investigate which endometrial morphological features assessed by gray scale ultrasound and color Doppler vessel are useful for discriminating between benign intracavity and malignant endometrium pathology. The second aim was to evaluate the best ultrasound method for assessing the myometrial invasion.

Methodology 162 women in pre- and postmenopause were enrolled in a prospective study, with or without abnormal vaginal bleeding. We used IETA Group criteria: endometrial uniformity, echogenicity, regularity of the endometrial-myometrial border, Doppler color score, vascular pattern (single dominant vessel, with or without branching, multiple vessels with focal or multifocal origin, scattered vessels, color splashes, circular flow). The ultrasound diagnosis was compared with histopathological assessment.

Results The mean age of the study population was 56.46 ±10.84 years (range 36–88 years). 22.84% endometrial lesions were malignant. The mean endometrial thickness measured by transvaginal ultrasonography was found to be 18.02±10.94 mm (range 5–64 mm) and for women with endometrial cancer was 24.49±16.10 mm (95% confidence interval [CI] 14.34 to 35.16) From patients with endometrial cancer: 94.6% had endometrium with hyperecogenic aspect (p=0.006), all of them presented irregular jonction (p=0.001), mean color Doppler score was 3±1 (p=0.001), and 54.1% were with scattered vessels (p=0.001). Heterogenous echogenicity had Se=100% (95% CI 0.6756 to 1) and Sp=38.6% (95% CI 0.2706 to 0.5157) for endometrial cancer. Vascularization was not observed in 68.4% of patients with polyps. 80% of cases with submucous myomas demonstrated a circular flow pattern. We could correctly appreciate by ultrasound the depth of myometrial invasion.

Conclusion IETA morphological ultrasound criteria and color Doppler blood flow mapping are good tools for establishing the diagnosis of endometrial cancer. Myometrial invasion established by ultrasonography has increased feasibility.