

EP01.21 Development and internal validation of an ultrasound-based risk score for endometrial malignancy in premenopausal women with abnormal uterine bleeding

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Objective :

To develop and internally validate an ultrasound-based risk prediction score for endometrial malignancy in premenopausal women with abnormal uterine bleeding (AUB).

Methods :

Retrospective longitudinal analytical study was conducted over 8 years and 11 months (January 2016–November 2024) at Charles Nicolle Hospital, Tunis, Tunisia.

Premenopausal women with AUB who underwent endometrial biopsy followed by hysterectomy were included.

Multivariate logistic regression and ROC curve analysis were performed. Significant predictors were weighted to construct a risk score.

Results:

Among 209 patients, 13 (6.2%) had endometrial malignancy.

- ✓ Independent predictors of endometrial malignancy were **oral contraceptive use** (OR 29.9, 95% CI 1.5–587.1, $p = 0.025$), **endometrial thickness (ET) >9 mm** (OR 25.3, 95% CI 4.3–147.6, $p < 0.001$) and **vascularization** (OR 98.3, 95% CI 3.7–2594.8, $p = 0.006$).
- ✓ Protective factors included **≤1 hemorrhage episode** (OR 0.20, 95% CI 0.08–0.52, $p = 0.001$) and **lower bleeding abundance** (OR 0.30, 95% CI 0.13–0.65, $p = 0.002$).
- ✓ The final score allocated points as follows: ET >9 mm (+3), oral contraceptive use (+3), vascularization (+4), hemorrhage episodes ≤1 (−2), and lower bleeding abundance (−1).
- ✓ A cutoff ≥ 7 defined high risk. Model discrimination was excellent (**AUC 0.901**, 95% CI 0.825–0.976, $p < 0.001$). **Sensitivity was 77%, specificity 90%, positive predictive value 34%, and negative predictive value 98%.**

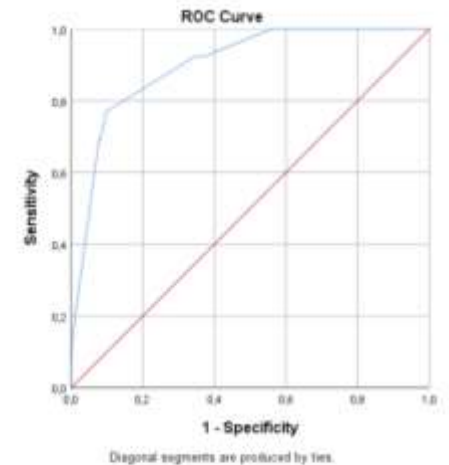


Figure 3. ROC curve associated with the prediction model of endometrial cancer in premenopausal women with abnormal uterine bleeding

CONCLUSIONS

This novel score, integrating ultrasound and clinical parameters, shows excellent performance and may support risk stratification and decision-making in premenopausal women with AUB.