

A Single Centre External Validation of the IETA-1 Model

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Objectives

To perform an external validation of the International Endometrial Tumor Analysis (IETA)-1 multinomial logistic regression model.

Methodology

In this retrospective study, 333 consecutive patients that presented to a tertiary Rapid Access Gynaecology Clinic at a University Teaching Hospital in London, UK, with abnormal uterine bleeding, underwent a transvaginal ultrasound. Data was collected on patient demographics and seven ultrasound variables as defined by the IETA group.

Histological confirmation following endometrial sampling was used as the reference standard; in cases with a presumed diagnosis of endometrial atrophy, the diagnosis was based on ultrasound findings with clinical follow-up.

Results

A total of 333 consecutive cases were included in the analysis. Diagnostic performance of the model was evaluated using a one-vs-rest approach for the four histological outcome categories. The model demonstrated excellent discrimination for malignancy (n = 16; AUC 0.979, 95% CI 0.947–0.999). Performance was also high for endometrial polyps or intracavity myoma (n = 77; AUC 0.891, 95% CI 0.842–0.934) and endometrial atrophy (n = 169; AUC 0.853, 95% CI 0.812–0.889). Discriminative performance was lower but remained acceptable for secretory or proliferative endometrium (n = 71; AUC 0.779, 95% CI 0.721–0.834).

Conclusion

The IETA-1 multinomial logistic regression model demonstrated excellent discrimination for endometrial malignancy and good diagnostic performance for the other histological subtypes.

Outcome (one-vs-rest)	n positive	AUC	95% CI
Malignancy	16	0.979	0.947–0.999
Polyp (<i>incl. myoma</i>)	77	0.891	0.842–0.934
Atrophy	169	0.853	0.812–0.889
Secretory/proliferative	71	0.779	0.721–0.834

Table 1. Diagnostic performance of model

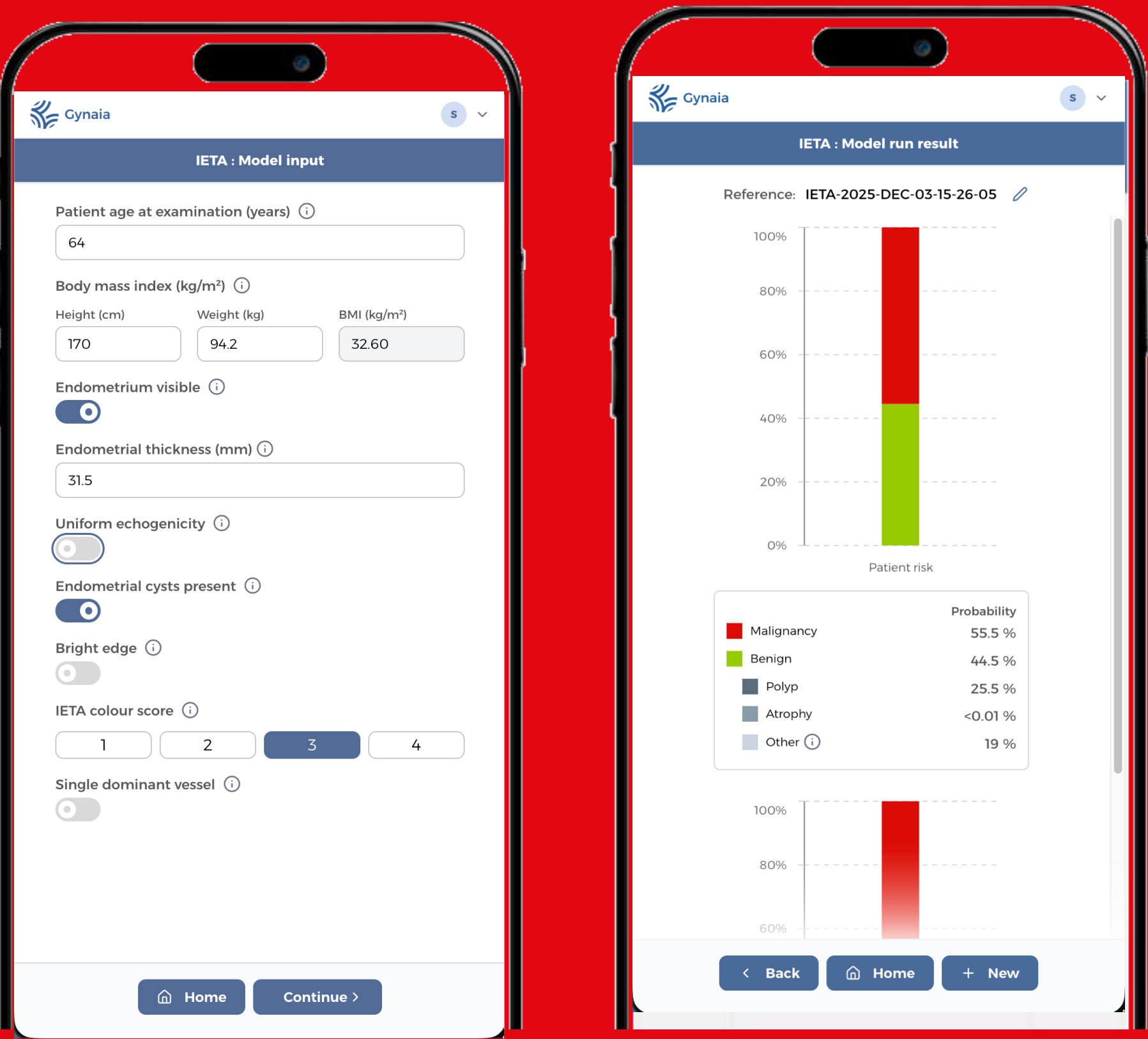
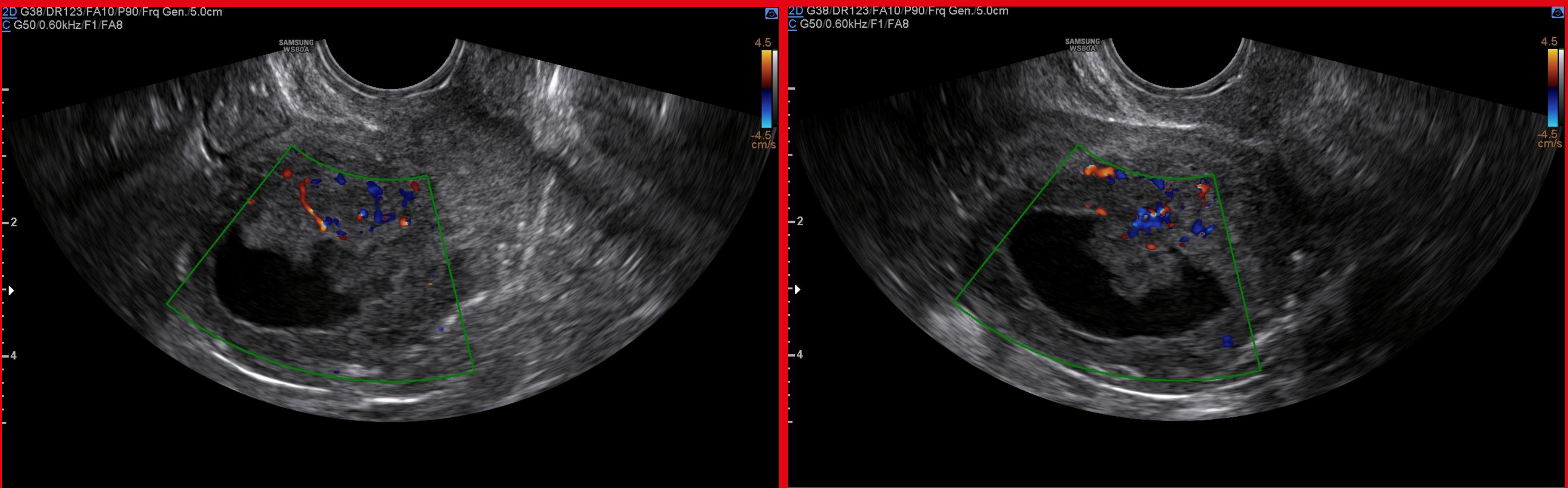


Figure 2. Example of variables used in IETA-1 Model to calculate risk of malignancy © Gynaia