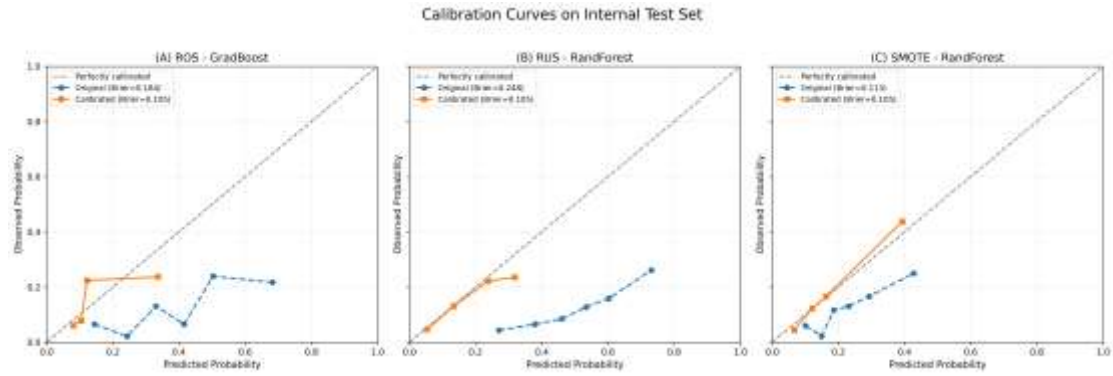




Supplementary Figure 1 Calibration curves and Brier scores of the best-performing models under each class-imbalance handling strategy on the independent test set. ROS-GradBoost, RUS-Random Forest, and SMOTE-Random Forest were selected because they achieved the highest AUC-ROC values within their respective resampling strategies.

Supplementary Table 1 Missing data for study variables

Variable	Missing data, n (%)
Pregestational BMI	1 (0.04%)
PlGF	14 (0.51%)
Uterine artery PI	14 (0.51%)
Previous GDM	5 (0.18%)
Previous gestational hypertension	2 (0.07%)
Previous preeclampsia	1 (0.04%)
Family history of diabetes mellitus	1 (0.04%)
Previous macrosomia	3 (0.11%)
PCOS	2 (0.07%)
IVF	3 (0.11%)
Cardiovascular disease	4 (0.15%)
Chronic hypertension	2 (0.07%)

BMI, body mass index; PlGF, placental growth factor; PI, pulsatility index GDM, gestational diabetes mellitus; PCOS, polycystic ovary syndrome; IVF, *in vitro* fertilization.