

Screening for PRE-eclampsia in BRAzil (SPREBRA): a multicenter prospective cohort study for validation of the FMF algorithm in a middle-income country

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Objectives

To validate the FMF first trimester PE screening algorithm in a Brazilian population and compare its performance with maternal factors (MF) alone.

Methods

Prospective multicenter cohort
- 11 centers in Brazil

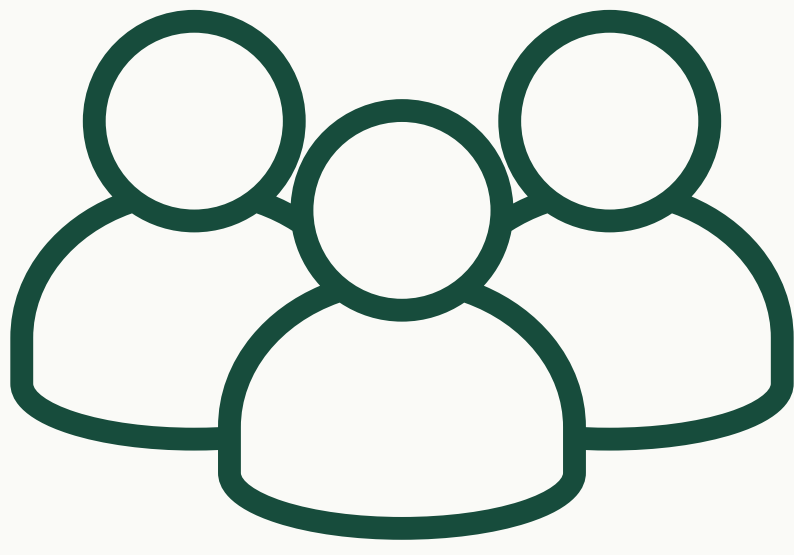
Singleton pregnancies
11–13+6 weeks

FMF PE screening protocol:
MF, MAP, UtA-PI, PAPP-A, PIGF

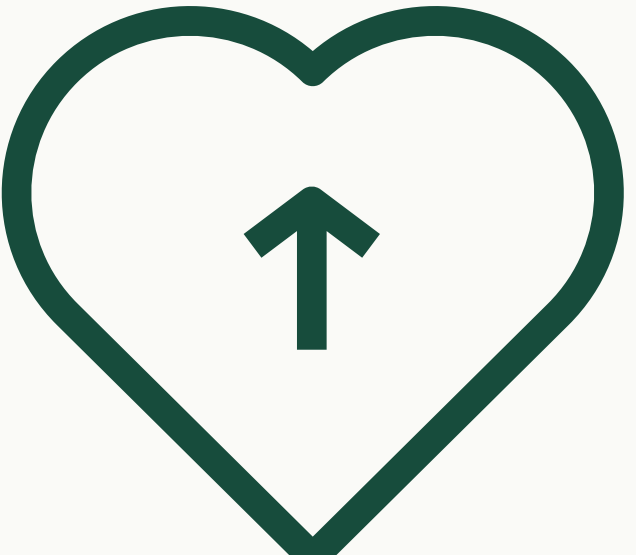
DRs for preterm PE (<37 weeks) for different biomarker combinations at 10%, 15% and 20% FPR
Area under the ROC curve (AUC)

Primary model of interest:
MF+MAP+UtA-PI+PIGF (“triple test”)

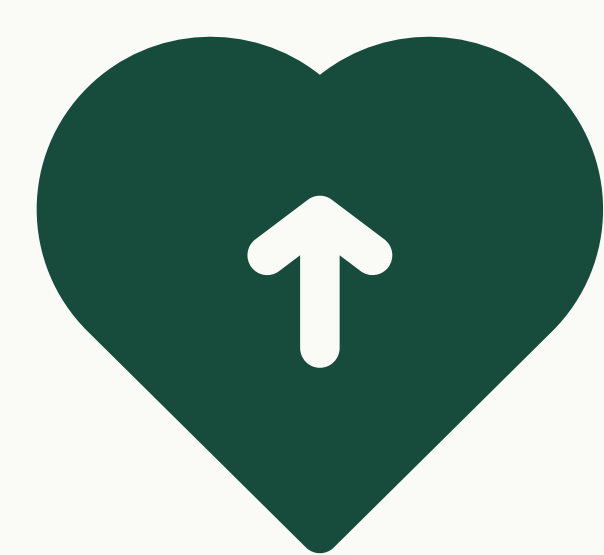
Results



1776
women included



152 (8.6%)
PE cases



54 (3.0%)
preterm PE cases

Detection rates for preterm PE at fixed FPRs

MF+MAP+UtA-PI+PIGF (best performing combination)		
10% FPR	15% FPR	20% FPR
61.1% (95% CI 48.1–74.1%)	74.1% (95% CI 63.0–85.2%)	77.8% (95% CI 66.7–88.9%)
AUC 0.817 , 95% CI 0.750–0.878		
MF alone		
10% FPR	15% FPR	20% FPR
37.0% (95% CI 24.1–50.0%)	50.0% (95% CI 37.0–64.8%)	51.9% (95% CI 38.9–66.7%)
AUC 0.742 , 95% CI 0.677–0.807		

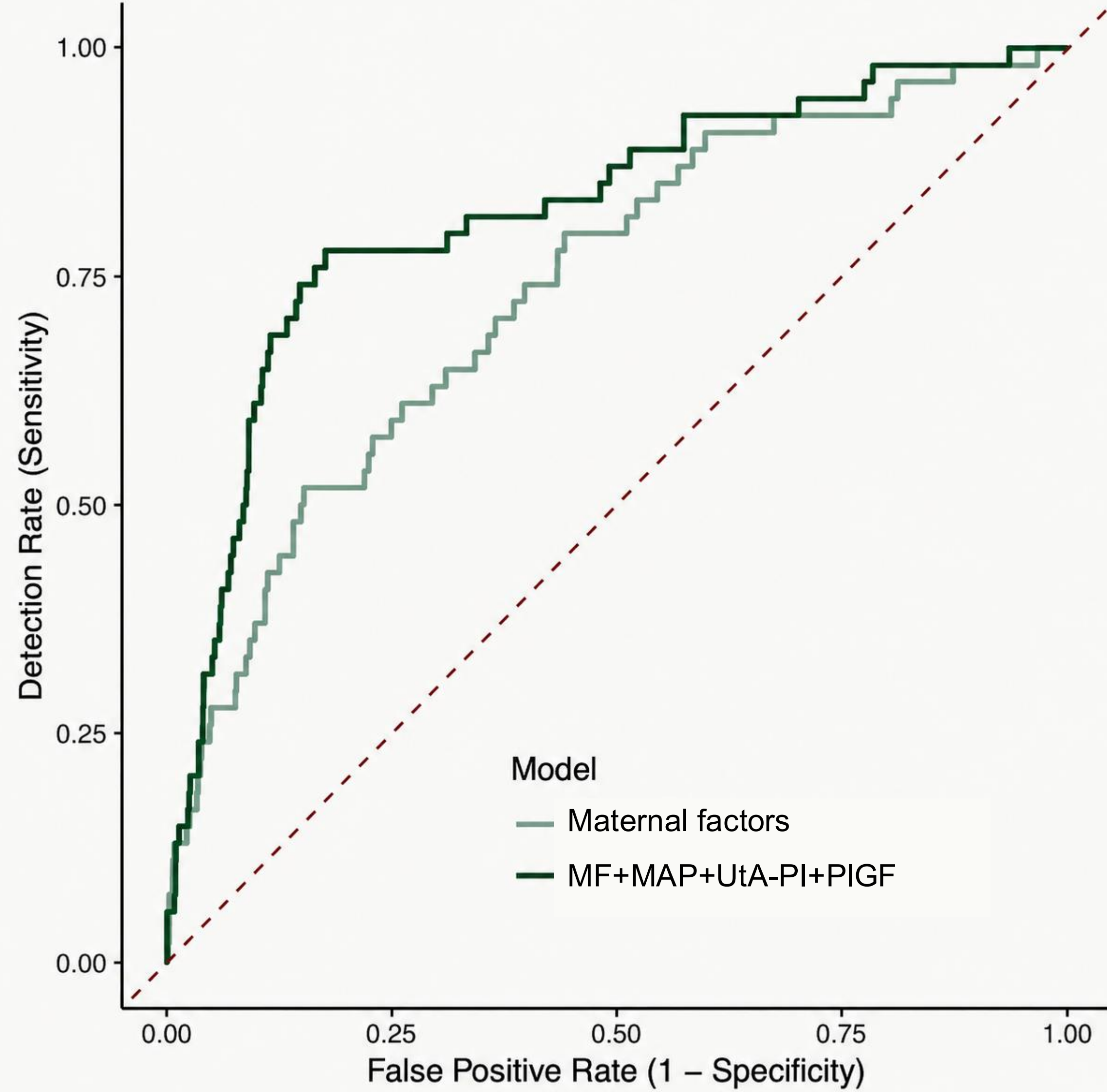


Figure 1. ROC curves for screening for preterm PE based on MF and on MF+MAP+UtA-PI+PIGF in the SPREBRA cohort

Conclusion

The FMF algorithm demonstrated good predictive performance in a large Brazilian cohort and **outperformed screening based on maternal factors alone.**



Scan to access the full performance table for all biomarker combinations and to know the full SPREBRA study group.