

sFlt-1/PIGF ratio as secondary screening for pre-eclampsia after FMF risk stratification

Improving risk prediction in high-risk pregnancies

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BACKGROUND

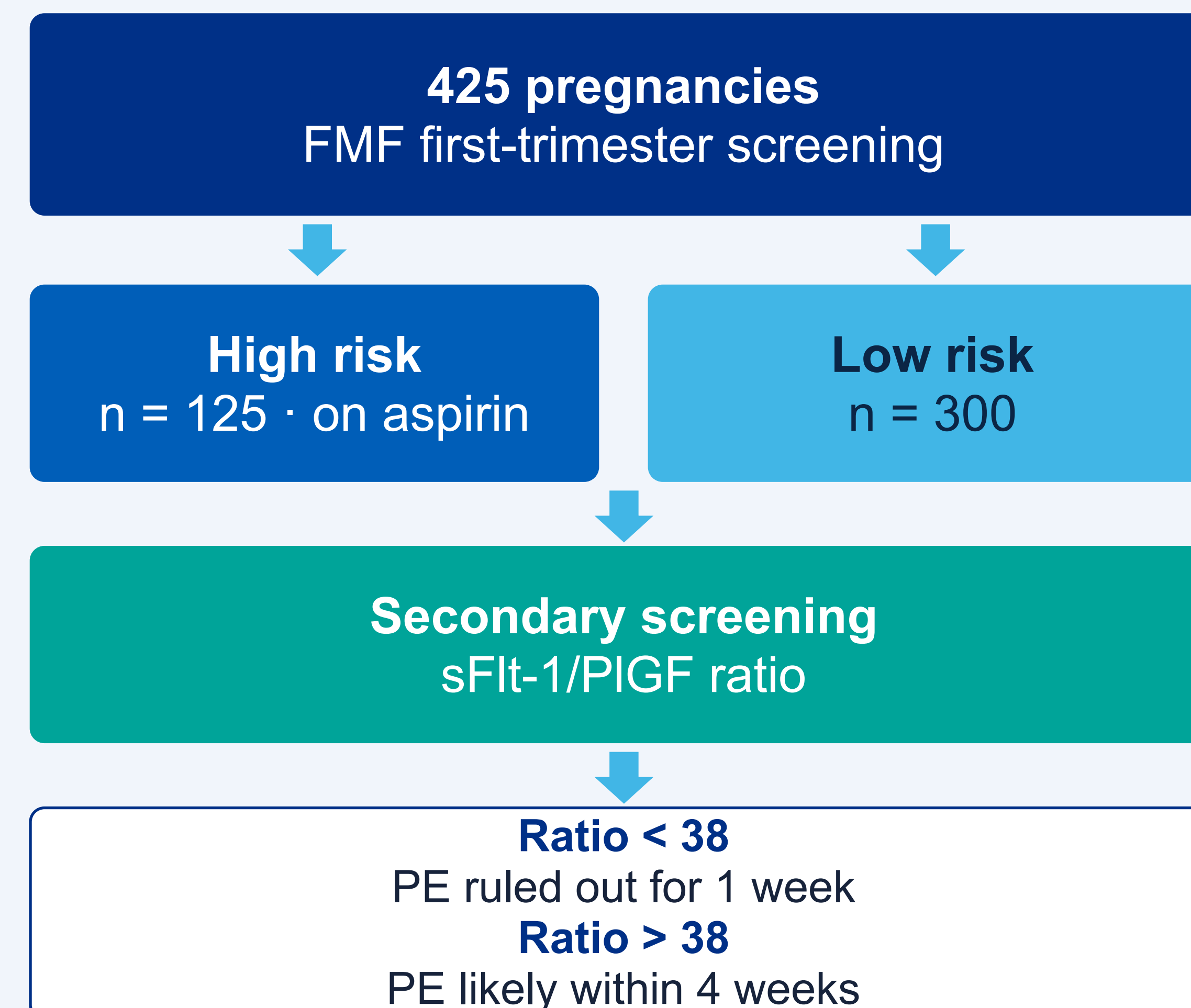
- The Elecsys sFlt-1/PIGF immunoassay (Roche) is used after 20 weeks to predict pre-eclampsia (PE) and is highly accurate in the short term; trials have shown associated reductions in morbidity.
- The Fetal Medicine Foundation (FMF) first-trimester algorithm predicts preterm PE very accurately, but performs relatively poorly for PE at term.
- Only about 10% of women identified as high risk in the first trimester go on to develop PE, creating challenges for ongoing risk stratification.
- Combining these two applications of angiogenic markers therefore potentially yields the greatest benefit.

AIM

To evaluate whether angiogenic biomarkers (the sFlt-1/PIGF ratio) provide effective secondary screening in women who have already undergone first-trimester FMF risk assessment.

METHODS

- Between January 2022 and May 2025, 425 pregnancies underwent both primary first-trimester screening with the FMF algorithm and secondary screening with the sFlt-1/PIGF ratio.
- PE was defined according to the 2018 ISSHP consensus statement.
- Cut-offs for sFlt-1/PLGF ratio were the NICE-recommended thresholds following the PROGNOSIS trial.



FMF FIRST-TRIMESTER SCREENING

Detection rates, 2022–2024

83.3%

Early preterm PE (< 34 weeks)
10 / 12 detected

78.3%

Preterm PE (< 37 weeks)
36 / 46 detected

SECONDARY SCREENING WITH sFlt-1/PIGF

Group	PE	No PE
High risk (n = 125)	30	95
Low risk (n = 300)	35	265

100%

Sensitivity

for short-term prediction of PE —
in both risk groups

97.1%

Specificity

first-trimester high-risk group
(n = 125)

95.1%

Specificity

first-trimester low-risk group
(n = 300)

CONCLUSION

- The sFlt-1/PIGF ratio was highly accurate for short-term prediction of PE in a cohort that had already undergone first-trimester screening.
- It provides effective secondary risk stratification in women already screened with the FMF algorithm.
- This supports more targeted surveillance — reducing unnecessary intervention while maintaining safety.

1. Duhig KE, Myers J, Seed PT, et al. Placental growth factor testing to assess women with suspected pre-eclampsia: a multicentre, pragmatic, stepped-wedge cluster-randomised controlled trial. *Lancet* 2019;393:1807.

2. Zeisler H, Llurba E, Chantraine F, et al. Predictive value of the sFlt-1:PIGF ratio in women with suspected pre-eclampsia. *N Engl J Med* 2016;374:13.