

3-YEAR RETROSPECTIVE OBSERVATIONAL STUDY ON ASSOCIATION BETWEEN LOW PAPP-A AND PREGNANCY OUTCOMES

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INTRODUCTION:

Pregnancy-associated plasma protein-A (PAPP-A) is a glycoprotein produced by the placental syncytiotrophoblast, which has key roles in foetal growth promotion and maintenance of placental health. PAPP-A is a well-established marker used in the NHS combined screening programme for the detection of first trimester trisomies. Increasing evidence in literature has shown low levels of PAPP-A to be associated with a greater risk of adverse outcomes such as foetal growth restriction, preterm labour, pre eclampsia and stillbirths.

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OBJECTIVE:

The aim of our study was to assess the link between low PAPP-A levels and the development of small for gestational age (SGA) babies and foetal growth restriction (FGR) in our patient cohort.

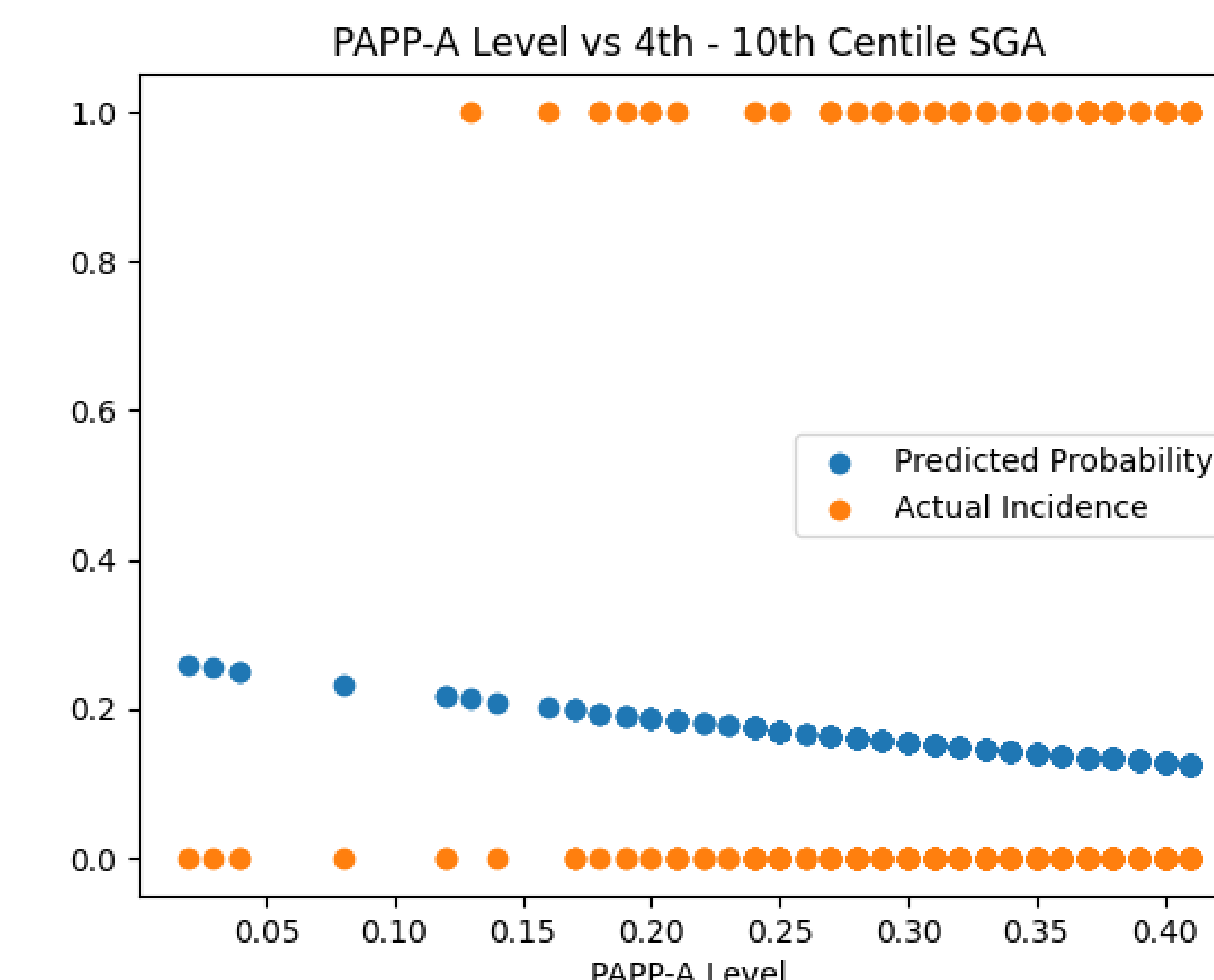
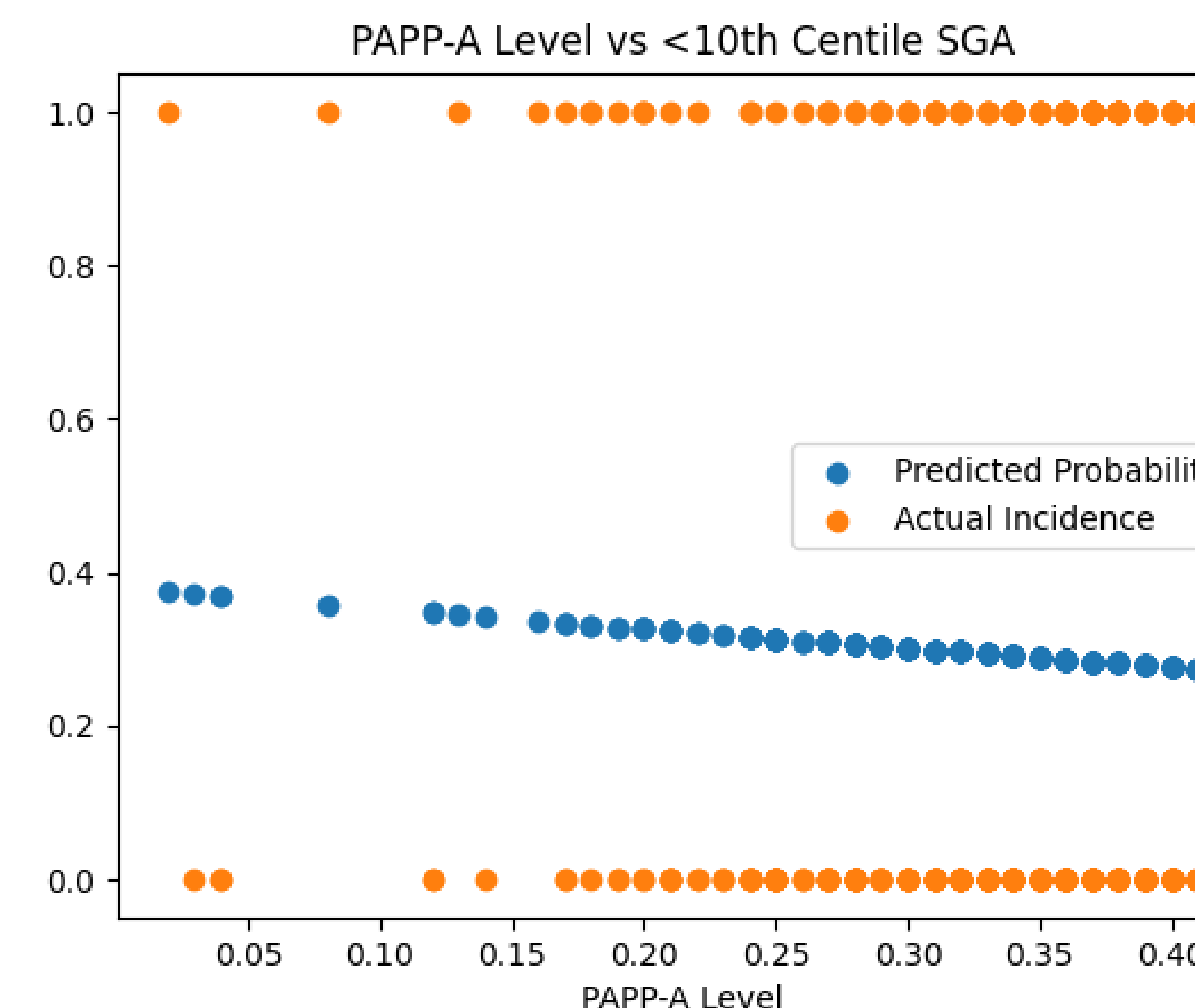
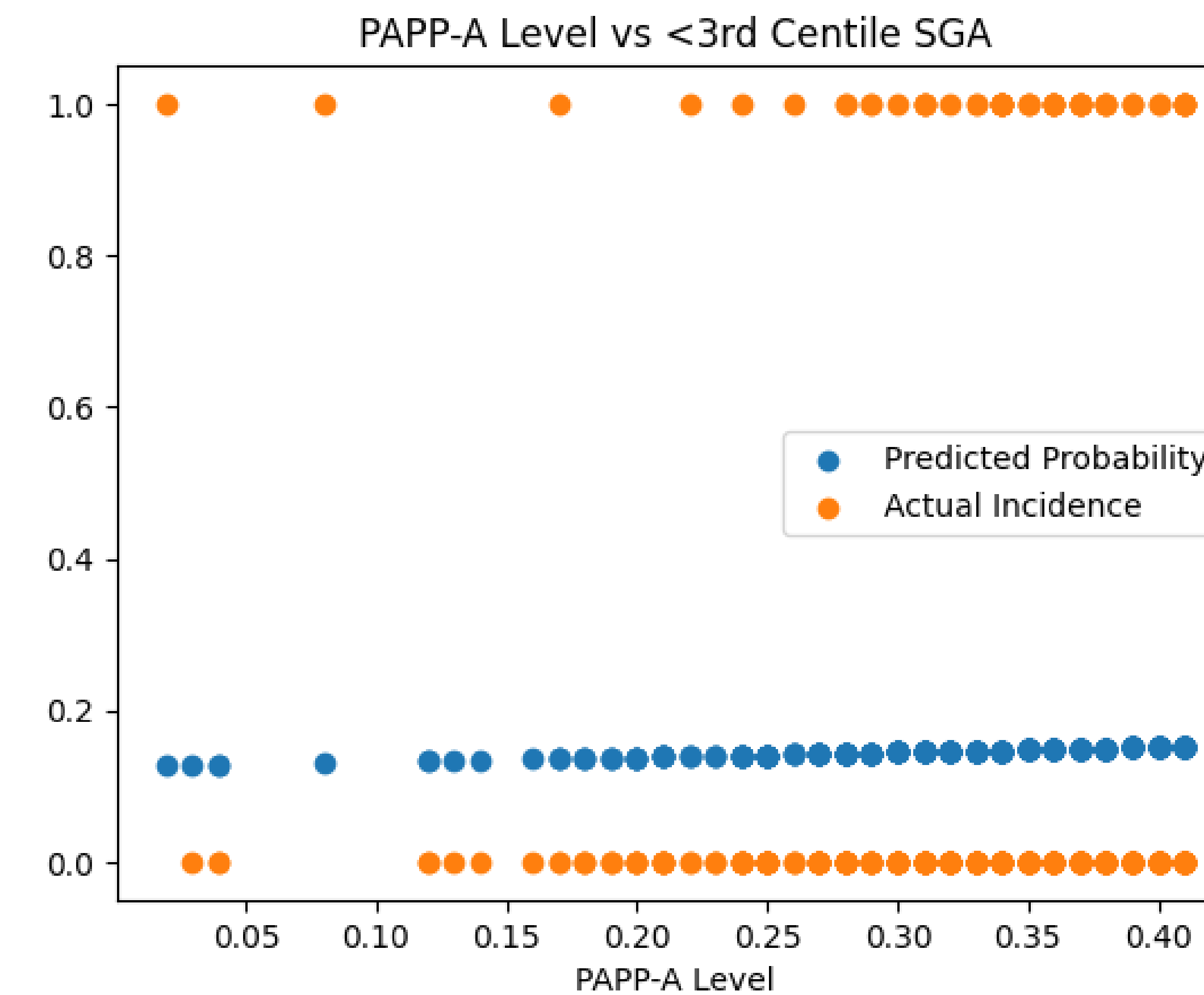
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DESIGN AND METHODS:

- Retrospective observational study on all pregnancies booked at our hospital from 1st January 2019 to 31st December 2021 who were found to have a PAPP-A level ≤ 0.4 MoM (≤ 5 th centile).
- 12,882 women delivered after 24 weeks at our hospital.
- Following exclusion criteria, 448 women were found to have low PAPP-A.
- Exclusion criteria included miscarriages, terminations and unavailability of follow-up.
- Data on maternal demographics, BMI, parity, previous birth weights, smoking status, hypertension, gestation at delivery, mode of delivery, birthweight, Apgar scores, and admission to neonatal unit was recorded.
- Data was collected through CMiS maternity electronic system, anonymised and collated on Excel.

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RESULTS AND ANALYSIS:



Statistical analysis was performed using Excel and Python. Statistical significance was defined as p-value < 0.05 .

Multivariate logistic regression analysis showed that no correlation between low PAPP-A levels (≤ 0.4 MoM) and SGA babies ≤ 10 th centile ($p=0.4529$), SGA babies between 4-10th centile ($p=0.7920$) and FGR babies defined as ≤ 3 rd centile ($p=0.2296$).

CONCLUSION:

Low PAPP-A levels detected at combined screening have a poor correlation for detecting SGA and FGR babies. Universal offering of serial growth scans after categorising as high risk of foetal growth restriction on PAPP-A < 5 th centile is questionable.