

Poster number EP07.89

Re-evaluating the association between low PAPP-A in early pregnancy and small for gestational age infants: a retrospective service improvement study

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Introduction

Low PAPP-A in early pregnancy is an independent risk factor for small-for-gestational age (SGA). Low levels (<5th centile) of this biomarker are also associated with placental dysfunction and stillbirth. However, this biomarker has a relatively low sensitivity when used in isolation.

Objective

Identify whether low PAPP-A is associated with SGA in our pregnant population.

Method

A retrospective service improvement project was conducted to investigate all pregnancies with low PAPP-A identified between January and December 2024.

Birthweight centiles were calculated using the “Foetal Medicine Foundation Birth Weight Assessment” calculator. All centiles below the 10th centile were defined as SGA.

The birthweight centiles were then compared to an equal number of randomly selected pregnancies within that period, which had not been affected by low PAPP-A.

Results

In this preliminary analysis, a total of 59 pregnancies were included (29 in the low PAPP-A group and 30 in the normal PAPP-A group)

There was no statistically significant difference in the proportion of SGA infants between the 2 groups as determined by Fisher's exact test (OR 2.48, 95% CI 0.65–8.34; $p = 0.21$, two-tailed)

Conclusion

Low PAPP-A may not be associated with SGA birthweight centiles in our pregnant population.

More studies and further analysis of this cohort are warranted to investigate whether this finding is consistent across our entire study population and how other risk factors affecting birthweight centile could have contributed to this finding.

