

# IMPACT OF ROUTINE THIRD TRIMESTER ULTRASOUNDS ON OBSTETRIC AND NEONATAL OUTCOMES IN AN AUSTRALIAN TERTIARY CENTRE



Praneel Kumar, Adrienne Gordon, Jon Hyett, Elizabeth Fisher, Jose Garcia Flores, Saleem Ahmed Khan, Brad De Vries, Ritu Mogra  
Department of Women and Babies, Royal Prince Alfred Hospital, Sydney, NSW



## Introduction

Fetal growth disorders are associated with perinatal morbidity and mortality.<sup>1</sup> Our tertiary institution implemented a routine third trimester ultrasound (USS) policy at 36 weeks gestation with the goal of detecting at-risk fetuses more effectively.

## Aims

To evaluate the impact of this policy on overall obstetric and neonatal outcomes.

## Methods

- Design: single (tertiary) centre retrospective cohort study.
- Participants: women who delivered singletons  $\geq 35$  weeks gestation before the implementation of a routine third trimester ultrasound policy ('pre-policy cohort') compared to deliveries after the implementation of the policy ('post-policy cohort').
- Intervention: obstetric USS at 36 weeks gestation for fetal biometry, estimated fetal weight and fetal Dopplers (results of the ultrasound were relayed to the obstetric team).
- Primary outcomes: rates of stillbirth, inductions, early term deliveries and NICU admissions.
- Statistical analysis: differences in continuous variables between cohorts were tested using independent samples t-test and the differences in proportions were tested with Chi-square test.

## Results

Baseline characteristics were similar in the pre-policy and post-policy cohorts. Following the introduction of the policy, there was a statistically significant:

- Increase in the detection of small for gestational age fetuses (from 1% to 3.8%,  $p < 0.001$ ) and large for gestational age fetuses (from 3.4% to 4.2%,  $p < 0.001$ )
- Increase in the rates of inductions (from 33.5% to 38.2%,  $p < 0.001$ )
- Increase in early term deliveries (from 26.9% to 31%,  $p < 0.001$ )
- Decrease in vaginal birth rates (from 69.8% to 66%,  $p < 0.001$ )
- Increase in NICU admissions (from 13% to 15%,  $p = 0.04$ )
- No decrease in stillbirth rates (0.1% to 0.04%,  $p = 0.18$ )

↑ SGA & LGA detection    ↑ Inductions    ✗ No decrease in stillbirths

## Discussion

- This is the first Australian based study reporting on outcomes from a routine third trimester ultrasound policy.
- Our study did not observe improvements in obstetric and neonatal outcomes following routine third trimester ultrasounds.
- These findings are consistent with other studies in low risk women with routine third trimester ultrasounds<sup>2</sup>.
- Strengths of this study: high quality ultrasounds, large data set
- Limitations: retrospective study with biases (incomplete data) and confounders
- Recommendation: the policy requires ongoing monitoring at our centre and other centres implementing a similar policy should have regular audits on outcomes

## References

1. Lindqvist PG MJ. Does antenatal identification of small-for-gestational age fetuses significantly improve their outcome? *Ultrasound Obstet Gynecol.* 2005;25(3):258-64.
2. Bricker L MN, Pratt JJ. Routine ultrasound in late pregnancy (after 24 weeks' gestation). *Cochrane Database Syst Rev.* 2015;2015(6):CD001451.



### Pre-policy cohort

1 July 2016 to 30 June 2016

4826 deliveries

34% (1654) had third trimester USS



### Post-policy cohort

1 July 2018 to 30 June 2019

4499 deliveries

81% (3683) had third trimester USS