

Prediction of small for gestational age neonates by combining uterine artery doppler at 18 – 24 weeks’ gestational age, maternal factors and fetal biometry: Ambispective Cohort Study



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Introduction

- Several studies in UK have demonstrated that screening in the second trimester by UtA Doppler in addition to maternal factors and fetal biometry improves the prediction of SGA neonates.
- There have been very limited studies on Indian population, therefore, in this study we will investigate the performance of uterine arteries Doppler screening at 18 – 24 weeks’ gestation in predicting SGA neonate in Indian population.

Aim of the Study

- To study the uterine artery doppler (UtA – PI), maternal factors and fetal biometry at 18 – 24 weeks’ gestation to predict the delivery of Small for Gestational Age neonate in Indian population

Objectives

PRIMARY OBJECTIVE

- The determine the screening performance of combined parameters uterine artery doppler (UtA-PI) , maternal demographics and clinical factors (maternal factors) and estimated fetal weight at 18 – 24 weeks period of gestation in predicting SGA and the delivery of SGA neonate

SECONDARY OBJECTIVES

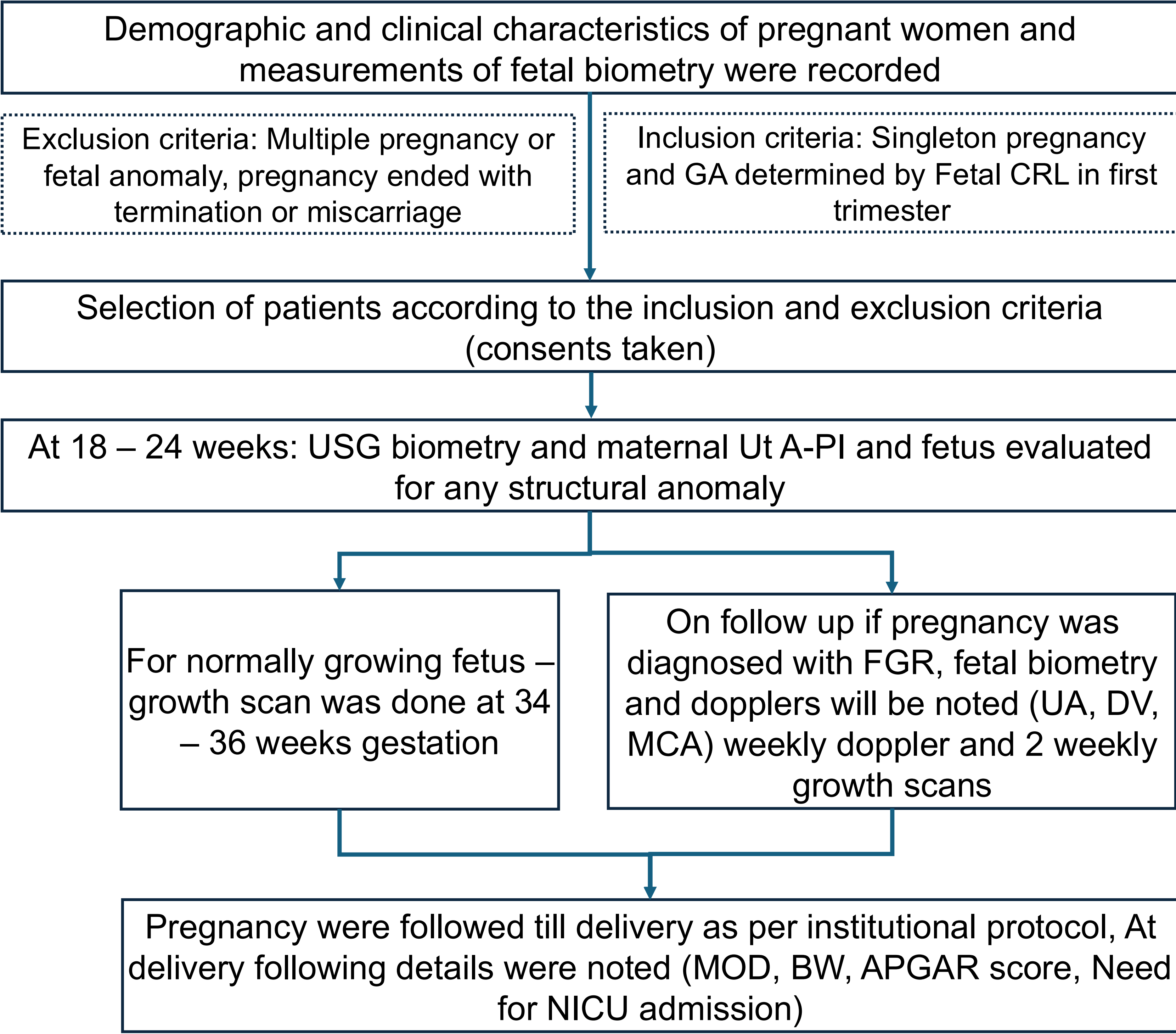
To determine the potential role of UtA-PI in prediction of SGA neonate and performing following comparisons:

- UtA-PI with maternal factors.
- UtA-PI plus maternal factors with maternal factors.
- UtA-PI plus maternal factors with EFW
- UtA-PI plus EFW with maternal factors.

Methodology

- Ambispective observational study conducted in the Department of Obstetrics and Gynaecology, at AIIMS, India over a period of two years and included 500 patients (200 retrospective and 300 prospective)

Methodology Workflow

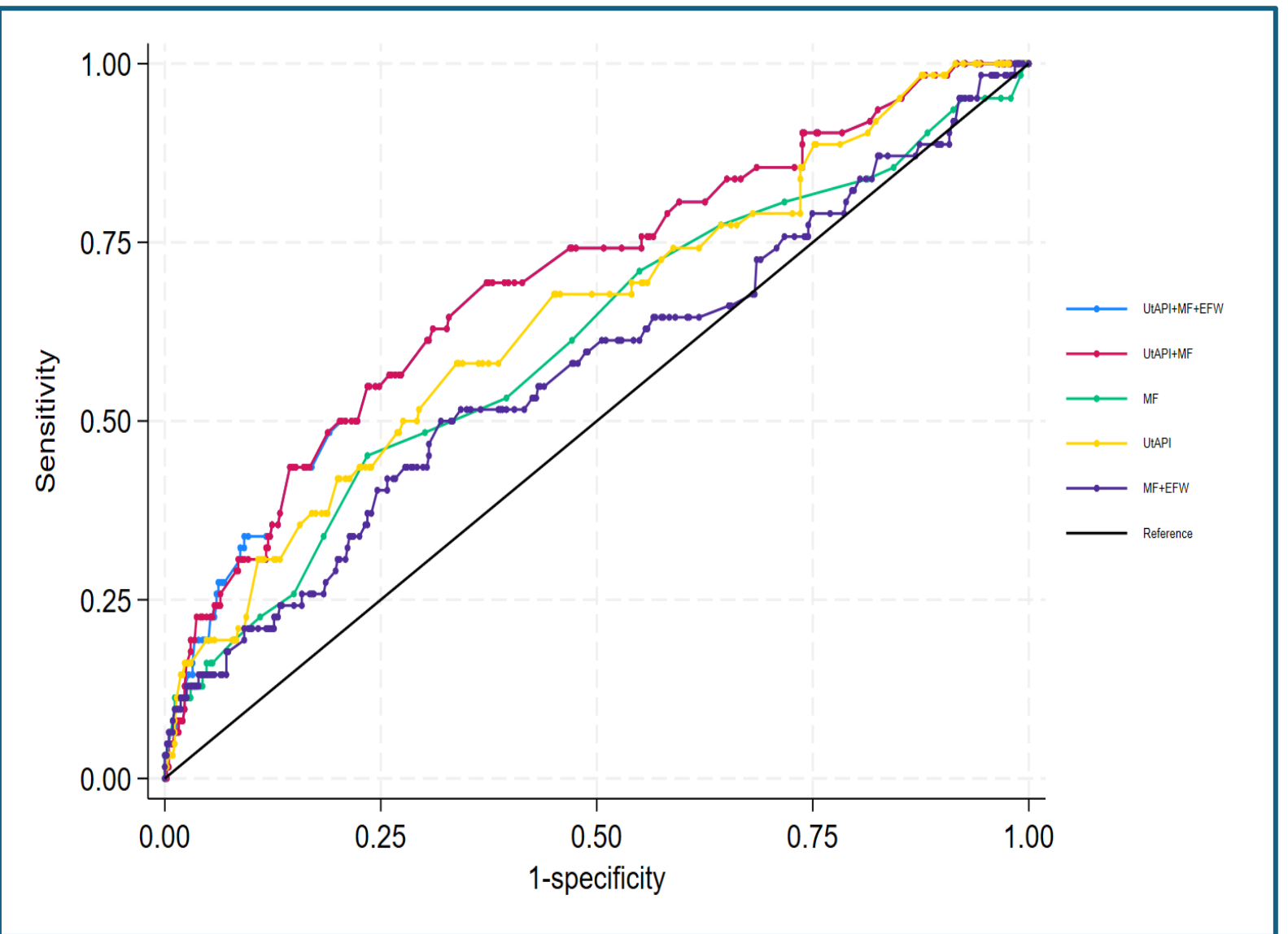


Results

Primary outcome

Characteristic	Multivariate (OR)	p value
1. UtA PI mean	5.49 (2.51 - 11.97)	<0.001
2. Maternal factors		
• Chronic hypertension	3.73 (1.25 - 11.1)	0.018
• Previous still birth	3.31 (1.04 - 10.51)	0.042
3. EFW (18-24 weeks)	1.001	0.37

UtA PI+ MF+ EFW



ROC for screening performance of various models

Model	ROC area	95% conf. interval
UtA PI+MF+EFW	0.6973	0.62-0.77
UtA PI+ MF	0.6970	0.623-0.77
MF	0.6092	0.52-0.69
UtA PI	0.6463	0.56-0.722
MF+ EFW	0.5737	0.49-0.88

Conclusion

- UtA PI improved the screening performance for prediction of SGA when combined with traditional maternal risk factors, demographics along with EFW in second trimester (18-24 weeks).
- However, EFW at 18-24 weeks alone or in combination did not improve diagnostic accuracy of the test.