

Abdominal circumference < 3rd vs EFW < 3rd %tile to predict adverse outcomes

Katherine Pressman MD¹, Madeline Erwich BS¹, Anthony O. Odibo MD², MSCE, Jose R. Duncan MD¹
1. University of South Florida , Morsani College of Medicine, Tampa, FL 2. University of Missouri Kansas City, MO.

Introduction

Estimated fetal weight (EFW) < 3%tile or abdominal circumference (AC) < 3%tile are both criteria for fetal growth restriction (FGR). We sought to compare the ability of AC < 3%tile vs. EFW < 3%tile for the prediction of adverse neonatal outcomes and small for gestational age (SGA).

Methods

This was a secondary analysis of singleton pregnancies with growth assessment between 26 and 36 weeks. Chromosomal, congenital malformations, and those without delivery information were excluded. A composite adverse neonatal outcome (CANO) was defined as one or more of the following:

- NICU admission
- Umbilical artery pH < 7.1
- Apgar score < 7 at 5 minutes
- Seizures
- RDS
- IVH grade III or IV
- Neonatal death

We compared the predictive abilities of Hadlock EFW < 3%tile, and Hadlock AC < 3%tile to identify SGA and CANO by calculating the area under the receiver operating characteristic curve, sensitivity, specificity, positive predictive value, and negative predictive value.

Results

- Of 1054 patients:
- 26 had an EFW < 3%tile
 - 72 had an AC < 3%tile
 - 139 neonates were SGA
 - 221 had a CANO
 - AC < 3rd was better to detect SGA compared to EFW <3rd (AUC and 95% CI were: 0.66 [0.62-0.70]vs 0.57 [0.54-0.60], p-value < 0.005) (Figure 1A)
 - There was no difference in their ability to predict CANO (AUC 0.52 [0.50-0.54] vs 0.52 [0.50-0.53]) (Figure 1B).

Conclusion

Both AC < 3rd and EFW <3rd percentile are poor predictors of adverse neonatal outcomes. But AC < 3rd percentile may increase the detection of SGA compared to EFW < 3rd%tile.



	Sensitivity	Specificity	PPV	NPV	AUC
AC < 3					
SGA	34	98	70	85	66
CANO	10	94	33	80	52
EFW < 3					
SGA	15	99	77	89	57
CANO	5	98	42	80	52

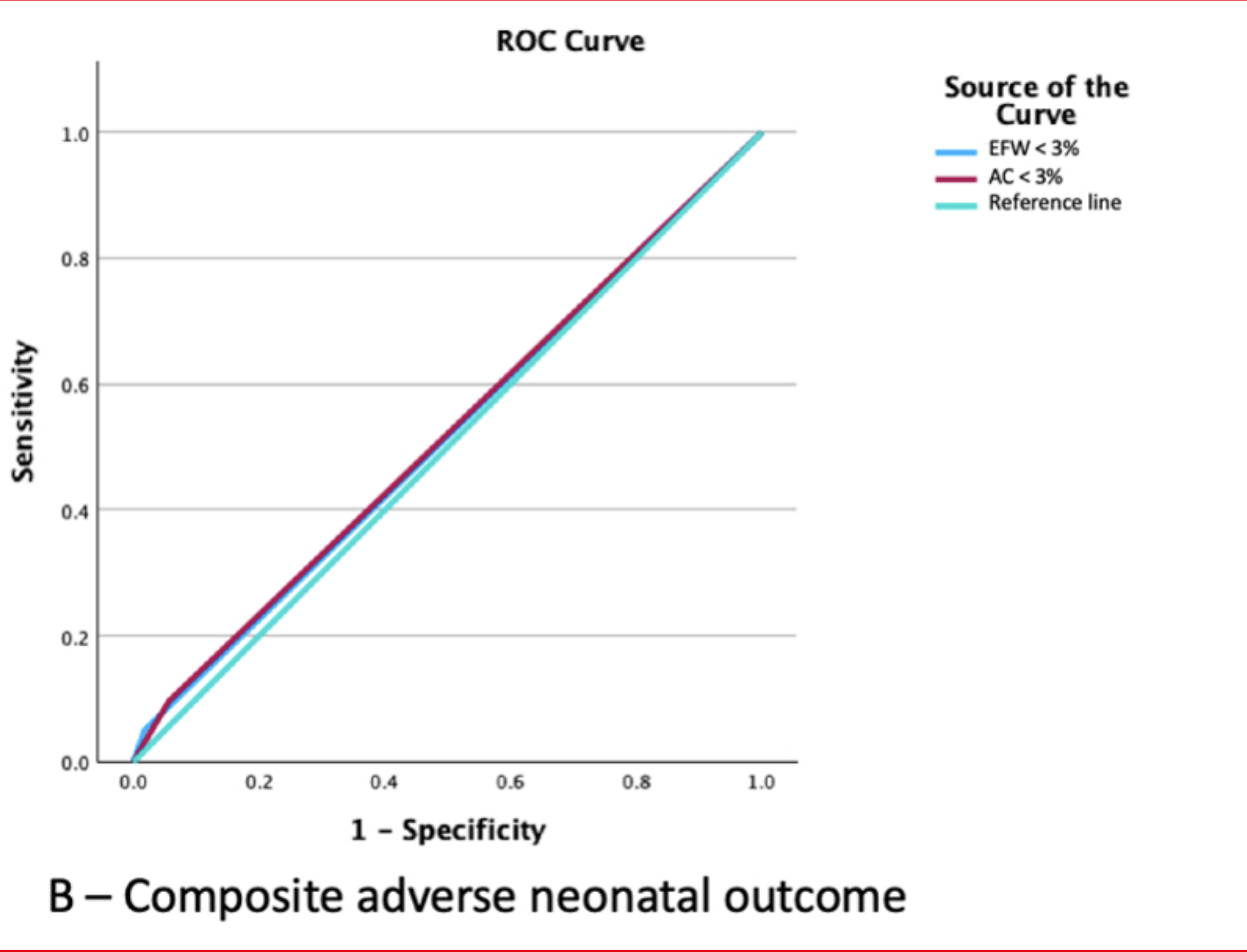
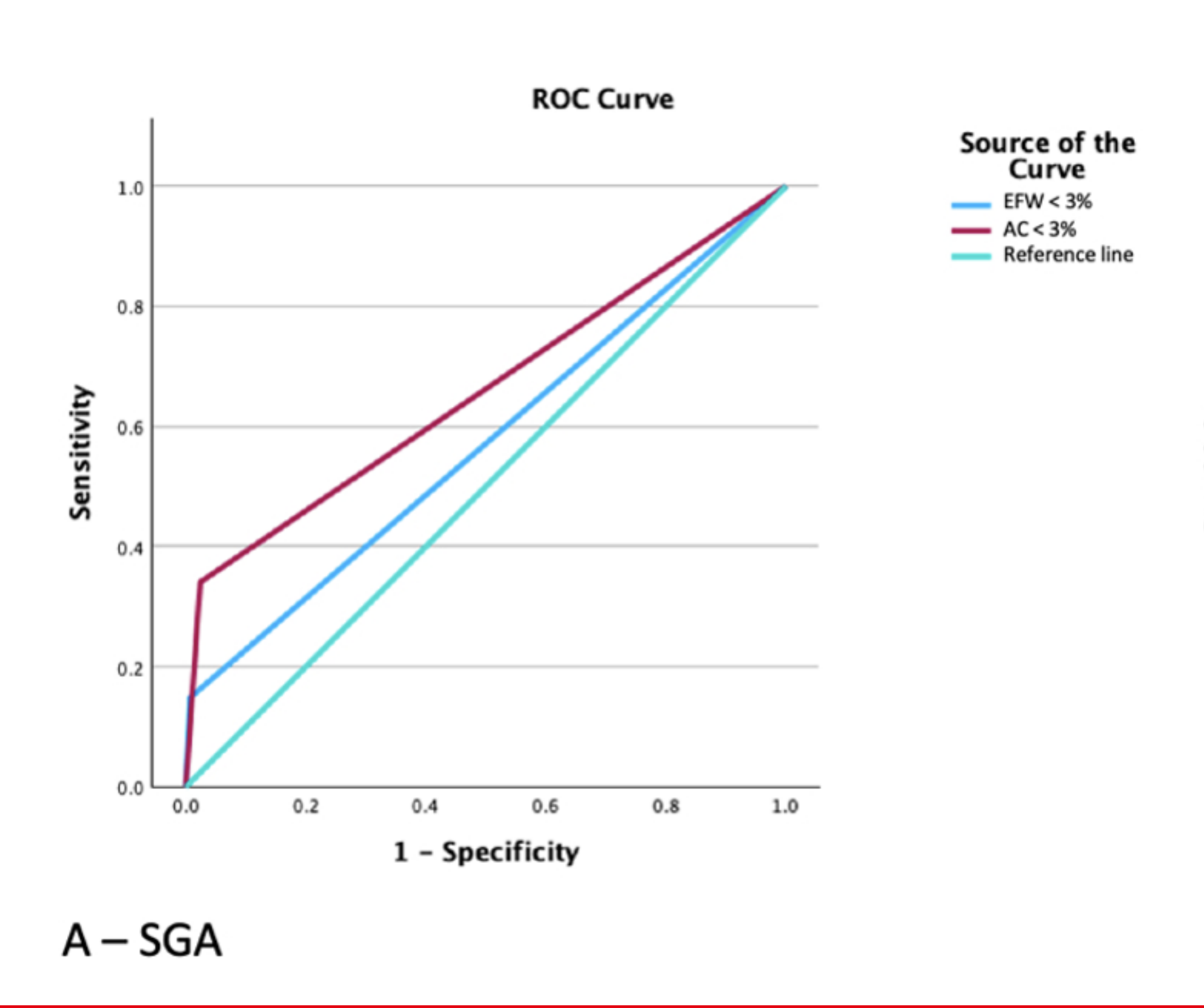


Figure 1 A/B. ROC for SGA and composite adverse neonatal outcomes