Association between Simplified Bishop Score after cervical ripening and delivery outcome

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Background

- Simplified Bishop Score (dilation, effacement, station) is used to evaluate favorability of induction with oxytocin
- Favorable cervices (SBS>5) is associated with successful vaginal delivery
- Limited data on the utility of SBS after cervical ripening

Objective

- Determine if the SBS prior to oxytocin induction, but after ripening, is associated with vaginal birth

Study Design

- Retrospective cohort study of induction of labor patients from NICHD Consortium on Safe Labor data
- Comparison of favorable and unfavorable cervices after cervical ripening
- Inclusion: singleton term pregnancies who initially received cervical ripening agents
- Exclusion criteria: history of cesarean section
- Primary Outcome: mode of delivery
- Multivariate logistic regression conducted on mode of delivery controlling for for SBS at admission and parity

Results

- 5,807 patients met criteria
- SBS≤5 group had more cesarean deliveries (32% vs 11%, p<0.0001)
- After controlling for maternal age, pre-pregnancy BMI, parity, GA, and SBS at admission, SBS≤5 after ripening remained associated with cesarean delivery

Conclusion

- Starting oxytocin with SBS>5 after cervical ripening is associated with successful vaginal birth, even after adjusting for parity and SBS at admission
- Consideration of SBS after cervical ripening should be given prior to induction with oxytocin.
- Further research is necessary to determine the ideal endpoint of cervical ripening.

Starting oxytocin with a favorable Simplified Bishop Score after cervical ripening is associated with successful vaginal birth

Questions?
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Table 1: Maternal and fetal outcomes by Simplified Bishop Score after cervical ripening

	SBS≤5 n=4,235	SBS >5 n=1,572	p-value
Maternal Outcome			
Cesarean Rate			
Total	1344 (32%)	172 (11%)	<0.0001
Nulliparous	1153 (44%)	157 (18%)	<0.0001
Multiparous	191 (12%)	15 (2%)	<0.0001
Postpartum hemorrhage	222 (5%)	98 (6%)	0.1410
Chorioamnionitis	187 (4%)	25 (2%)	<0.0001
Fetal Outcome			
Birth Weight Appropriate GA	3255 (77%)	1216 (77%)	0.3192
NICU admission	324 (8%)	100 (6%)	0.0934

Table 2: Logistic regression: adjusted odds ratios for cesarean delivery

	Full model N=5133
	aOR (95% CI)
Simplified Bishop Score before Oxytocin (≤5 vs >5)	2.52 (1.98 – 3.23)
Age (<35 vs ≥35)	2.53 (2.03 – 3.15)
Parity (0 vs ≥1)	7.27 (6.02 – 8.78)
Pre-pregnancy BMI (referent is BMI ≤24.9)	
BMI 25-29.9	1.46 (1.23 – 1.73)
BMI ≥30	2.01 (1.68 – 2.40)
Gestational age (≤39 vs >39 weeks)	1.60 (1.39 – 1.85)
Admission Simplified Bishop Score (≤5 vs >5)	2.52 (1.76 – 3.61)
	*-2 Log L: 4740.160 *c-index: 0.783