

195 Accuracy of growth restriction diagnosis_implications for testing and intervention

Molly J. Stout, Methodius G. Tuuli, Omar Young, George A. Macones, Jeffrey M. Dicke, Alison G. Cahill

¹Washington University in St. Louis, Saint Louis, MO

OBJECTIVE: The diagnosis of small for gestational age (SGA) fetal growth impacts antenatal management and decision-making. Fetuses with SGA growth undergo heightened surveillance with antenatal testing as well as planned deliveries between 37-39 weeks to avert the risk for stillbirth. The goal of this study was to examine accuracy of antenatal diagnosis of SGA fetal growth by ultrasound (US) compared to actual birth weight in term fetuses.

STUDY DESIGN: This is a prospective cohort study of all consecutive singleton term deliveries from a single institution from 2010-2014. Estimated fetal weight (EFW) by US obtained within 4 weeks of delivery was classified into <10%ile, <5%ile, and <3%ile by Hadlock 4. Sensitivity, specificity, positive and negative predictive values for the performance of antenatal US classification as <10th, 5th, or 3rd percentiles were compared to the same classification using actual birth weight.

RESULTS: A total of 1,733 fetuses had US EFW available within 4 weeks of delivery. Sensitivity, specificity, and predictive values for each category of antenatal SGA are presented in the Table. Sensitivity of US classification as <10%ile was 81% and specificity was 75%. PPV for antenatal US classification as <10%ile was only 52% corresponding to a 48% rate of misdiagnosing a fetus as SGA with birth weight that is normal (false positive). Conversely the negative predictive value of US EFW <10%ile was 92% corresponding to an 8% risk for misdiagnosing a fetus as appropriately grown antenatally with birth weight actually being less than the 10%ile (false negative). Sensitivity decreases with decreasing EFW percentiles.

CONCLUSION: Antenatal ultrasound classification of SGA <10th, <5th, and <3rd in term fetuses correctly classifies between 72-81% of fetuses with true SGA growth. The low positive predictive values among women undergoing late third trimester ultrasound suggest that US is most likely to over diagnose SGA in normal near-term and term fetuses. Increased antenatal testing and possible iatrogenic prematurity needs to be considered clinically given that almost half of the infants that carry a diagnosis of SGA at term are born AGA.

196 Does the relative efficacy of chlorhexidine-alcohol versus iodine-alcohol antiseptics differ between unscheduled and scheduled cesareans?

Methodius Gamuo Tuuli, Candice Woolfolk, Molly J. Stout, Lorene Temming, Alison G. Cahill, George A. Macones

¹Washington University in St. Louis, St. Louis, MO

OBJECTIVE: Scheduled and unscheduled cesareans may be at different risks for surgical site infection (SSI). We tested the hypothesis that chlorhexidine-alcohol and iodine-alcohol skin antiseptics are differentially effective for preventing SSI at unscheduled compared with scheduled cesarean.

STUDY DESIGN: This was a planned secondary analysis of a randomized trial in which pregnant women undergoing cesarean were randomly assigned to preoperative skin preparation with either chlorhexidine-alcohol or iodine-alcohol. The comparison groups were scheduled (planned, mostly without labor) and unscheduled (unplanned, mostly during labor) cesareans. The primary outcome was SSI within 30 days after cesarean based on the Centers for Disease Control Nosocomial Infections Surveillance System definitions. Outcomes were compared between the two groups, and the

Mantel-Hansel test of homogeneity was used to test for interaction between antiseptic type and scheduled/unscheduled cesareans.

RESULTS: Of 1082 subjects included in the intention-to-treat analysis, 640 (59.1%) were scheduled and 442 (40.9%) were unscheduled. The overall risk for SSI was significantly higher in unscheduled compared with scheduled cesareans (8.1% vs 4.5%, RR 1.80, 95%CI 1.12, 2.89). Chlorhexidine-alcohol was more protective than iodine-alcohol in scheduled (2.5% vs 6.5%, RR 0.38 95%CI 0.17, 0.85) and unscheduled cesareans (6.9% vs 9.4%, RR 0.73, 95%CI 0.39, 1.37), although the difference among unscheduled cesareans was not statistically significant (Table). The test of homogeneity (P=0.22) suggested comparable efficacy of chlorhexidine-alcohol in unscheduled and scheduled cesareans.

CONCLUSION: Unscheduled cesarean is associated with a nearly two-fold higher risk for SSI compared with scheduled cesarean. Chlorhexidine-alcohol appears superior to iodine-alcohol for prevention of SSI in both types of cesarean. Our results suggest that chlorhexidine-alcohol should be the antiseptic of choice at both scheduled and unscheduled cesarean.

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Table: Relative efficacy of chlorhexidine-alcohol versus iodine-alcohol in preventing surgical site infection in scheduled and unscheduled cesareans.

	Chlorhexidine-alcohol n (%)	Iodine-alcohol n (%)	Relative Risk (95% CI)	Test of homogeneity P-value
All cesareans (N=1082)	23 (4.3)	42 (7.7)	0.55 (0.34 - 0.91)	-
Scheduled cesareans (n=640)	8 (2.5)	21 (6.5)	0.38 (0.17 - 0.85)	0.22
Unscheduled cesareans (n=442)	15 (6.9)	21 (9.4)	0.73 (0.39 - 1.37)	

197 Early intrapartum fetal heart rate patterns and neonatal outcomes in nulliparas

John C. Hauth

¹for the Eunice Kennedy Shriver NICHD MFMU Network, Bethesda, MD

OBJECTIVE: To determine the association between various fetal heart rate (FHR) patterns identified in early labor and neonatal outcome.

STUDY DESIGN: This is a secondary analysis of data from 5341 nulliparous women randomized to "open" or "masked" intrapartum fetal pulse oximetry. Laboring nulliparas with a singleton, cephalic, living fetus at or beyond 36 weeks of gestation and with cervical dilatation between 2 cm and 6 cm were eligible for randomization. Fetal heart rate tracing collected before randomization were reviewed and the presence or absence of 11 patterns (Table 1) was documented. Intrapartum management was at the discretion of the attending physician and a research nurse was present to confirm the indication for cesarean delivery, and to evaluate the newborn. Primary neonatal composite outcomes are listed (Table 1).

RESULTS: 2130 of 5305 (40%) women included in this analysis had one or more of the 11 FHR patterns prior to randomization and 91 (4.3%) of their neonates had a primary outcome as compared to 107 neonates in the 3175 women with none of the FHR patterns (3.4%). Univariate associations of the 11 FHR patterns with the primary outcome are shown in Table 1. Women with 3 or more of these 11 patterns (n=157) had a low but significant increase in the primary outcome (OR 1.95; 95 CI 1.00, 3.81; p=0.05). Based on the OR and significance values (data in Table 1), the 11 patterns were categorized into Group A (patterns 1-6) and Group B (patterns 7-11). Group A patterns, but not Group B, were associated with an increased primary outcome as compared with none of these patterns (Table 2).

CONCLUSION: In healthy women at 36 weeks of gestation or later with FHR patterns 1-6 earlier in labor had significantly increased adverse neonatal outcomes compared with those with none of the patterns.