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ST Waveform Analysis versus Cardiotocography Alone for Intrapartum Fetal Monitoring: A Meta-Analysis of Randomized Trials.

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OBJECTIVE: To estimate the effectiveness of intrapartum ST waveform analysis (STAN) versus cardiotocography (CTG) alone in prevention of metabolic acidosis.

STUDY DESIGN: Meta-analysis of randomized trials comparing intrapartum fetal monitoring utilizing STAN with CTG versus CTG alone. Primary outcome was neonatal metabolic acidosis, defined as umbilical arterial pH <7.05 and base deficit >12 mmol/L.

RESULTS: Five randomized trials including 15,303 singletons, vertex, term, or near-term pregnancies met inclusion criteria and were analyzed. Compared with CTG alone, STAN with CTG was associated with similar incidences of metabolic acidosis (0.81% versus 1.12%, relative risk [RR] 0.80; 95% confidence interval [CI] 0.44 to 1.47), perinatal death, neonatal encephalopathy, Apgar score <7 at 5 minutes, admission to neonatal intensive care unit, and cesarean delivery. Operative vaginal delivery (OVD) was lower in the STAN with CTG compared with CTG alone (13.56% versus 15.20%; RR 0.89; 95% CI 0.83 to 0.97).

CONCLUSION: There is no difference in perinatal outcomes between STAN with CTG compared with CTG alone, except for lower rate of OVD.