



How can electronic fetal heart-rate monitoring best improve neonatal outcomes during induction of labor?

When clear definitions of abnormal heart-rate patterns and tachysystole are addressed through specific interventions, according to this prospective, non-randomized study of 14,398 women undergoing induction of labor with oxytocin.

Clark SL, Meyers JA, Frye DK, Garthwaite T, Lee AJ, Perlin JB. Recognition and response to electronic fetal heart rate patterns: impact on newborn outcomes and primary cesarean delivery rate in women undergoing induction of labor. Am J Obstet Gynecol. 2015;212(4):494.e1-e6.

► EXPERT COMMENTARY

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In this prospective cohort study of women undergoing induction of labor of a singleton fetus at term (≥ 37 weeks), Clark and colleagues examined each patient chart for adherence to 6 clinical practices:

- fetal weight estimated prior to induction
- clinical assessment of pelvic adequacy prior to induction
- completion of a safety checklist prior to induction
- completion of a safety checklist every 30 minutes during induction
- oxytocin infusion rate decreased if the fetal heart rate did not meet defined requirements
- oxytocin infusion rate decreased if uterine activity did not meet defined requirements.

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Defined requirements for fetal heart rate included at least 1 acceleration of 15 bpm x 15 seconds in 30 minutes, or adequate variability for 10 of the previous 30 minutes. There should have been no more than 1 late deceleration in the previous 30 minutes. And there should have been no more than 2 variable decelerations exceeding 60 seconds and decreasing more than 60 bpm from baseline in the previous 30 minutes.

Defined requirements for uterine activity included no more than 5 contractions in 10 minutes for any 20-minute interval. There should have been no 2 contractions longer than 120 seconds in duration. In addition, the uterus should have been soft upon palpation between contractions. If an intrauterine pressure catheter was in place, measurement in Montevideo units should have been less than

WHAT THIS EVIDENCE MEANS FOR PRACTICE

Implementation of a conservative intrapartum checklist has been shown to improve specific measures of newborn outcome. Further study is needed to define the impact on the rate of cesarean delivery.

» **DAVID A. MILLER, MD**

FAST TRACK

Use of an intrapartum checklist can improve specific measures of neonatal outcome

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300 mm Hg, with baseline resting tone of less than 25 mm Hg.

Outcome measures included admission to a neonatal intensive care unit (NICU), 1- and 5-minute Apgar scores of less than 7, and primary cesarean delivery.

Study findings underscore value of a checklist

The study found that completion of a safety checklist every 30 minutes during labor was associated with a significantly reduced rate of NICU admission and cesarean delivery. When the clinician stopped or reduced oxytocin for failure to meet specific uterine activity requirements, the rate of NICU admission also was reduced, but there were no differences in other outcomes. When the clinician stopped or reduced oxytocin for a failure to meet specific fetal heart-rate requirements, the rate of NICU admission was significantly

reduced, as was the rate of low Apgar scores at birth, but there was a significantly higher rate of cesarean delivery (26.6% vs 17.5%).

Strengths include size of the study

This is a large study in a population with demographics that likely reflect those of the general US population. The study size permitted detection of relatively small differences in outcome.

The data clearly support the conclusions that “electronic fetal heart-rate monitoring improves neonatal outcomes when unambiguous definitions of abnormal fetal heart rate and tachysystole are coupled with specific interventions” and that “utilization of a checklist for oxytocin monitoring is associated with improved neonatal outcomes.” However, data were conflicting regarding the impact of a standard oxytocin checklist on the rate of cesarean delivery. ❌

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