

# A French randomized controlled trial of ST-segment analysis in a population with abnormal cardiotocograms during labor.

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**OBJECTIVE:** The purpose of this study was to assess whether knowledge of ST-segment analysis was associated with a reduction in operative deliveries for nonreassuring fetal status (NRFS) or with a need for at least 1 scalp pH during labor.

**STUDY DESIGN:** Seven hundred ninety-nine women at term with abnormal cardiotocography or meconium-stained amniotic fluid (7%) were assigned randomly to the intervention group (cardiotocography + STAN) or the control group (cardiotocography) in 2 university hospitals in Strasbourg, France. Scalp pH testing was optional in both groups. Abnormal neonatal outcome was pH <7.05 or umbilical cord blood artery base deficit of >12 or a 5-min Apgar score of <7 or neonatal intensive care unit admission or convulsions or neonatal death. Study power was 80% for the detection of a prespecified reduction from 50%-40% in operative delivery for NRFS.

**RESULTS:** The operative delivery (cesarean or instrumental) rate for NRFS did not differ between the 2 groups: 33.6% (134/399) in the cardiotocography + STAN analysis group vs 37% (148/400) in the cardiotocography group (relative risk, 0.91; 95% CI, 0.75-1.10). The rate of operative delivery for dystocia was also similar in both groups. The percentage of women whose fetus had at least 1 scalp pH measurement during labor was substantially lower in the group with ST-segment analysis: 27% compared with 62% (relative risk, 0.44; 95% CI, 0.36-0.52). Neonatal outcomes did not differ significantly between groups.

**CONCLUSION:** In a population with abnormal cardiotocography in labor, cardiotocography combined with ST-segment analysis was not associated with a reduction in operative deliveries for NRFS. The proportion of infants without scalp pH sampling during labor increased substantially, however.