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A critical appraisal of the evidence for using cardiotocography plus ECG ST interval analysis for fetal surveillance in labor. Part I: the randomized controlled trials

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Abstract
We reappraised the five randomized controlled trials (RCTs) that compared CTG+ST vs. CTG. The numbers enrolled ranged from 5681 (Dutch RCT) to 799 (French RCT). The Swedish RCT (N=5049) was the only trial adequately powered to show a difference in metabolic acidosis, and the Plymouth RCT (N=2434) was only powered to show a difference in operative delivery for fetal distress. There were considerable differences in study design: the French RCT used different inclusion criteria, and the Finnish RCT (N=1483) used a different metabolic acidosis definition. In the CTG+ST study arms, the larger Plymouth, Swedish and Dutch trials showed lower operative delivery and metabolic acidosis rates, while the smaller Finnish and French trials showed minor differences in operative delivery and higher metabolic acidosis rates. We conclude that the differences in outcomes are likely due to considerable differences in study design and size. This will enhance heterogeneity effects in any subsequent meta-analysis.

Key message
Among the randomized controlled trials, the Plymouth, Swedish and Dutch trials have the most similar design and therefore should be the main source of information regarding the effectiveness of CTG+ST analysis for fetal surveillance in labor.