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A critical appraisal of the evidence for using cardiotocography plus ECG ST interval analysis for fetal surveillance in labor. Part II: the meta-analyses

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We appraised the methodology, execution and quality of the five published meta-analyses that are based on the five randomized controlled trials (RCTs) which compared cardiotocography (CTG) +ST analysis to CTG. The meta-analyses contained errors, either created *de novo* in handling of original data, or from a failure to recognize essential differences among the RCTs, particularly in their inclusion criteria and outcome parameters. No meta-analysis contained complete and relevant data from all five RCTs. We believe that one RCT excluded in two of the meta-analyses should have been included, while one RCT that was included in all meta-analyses, should have been excluded. After correction of the uncovered errors and exclusion of the RCT that we deemed inappropriate, our new meta-analysis showed that CTG+ST monitoring significantly reduces the fetal scalp blood sampling usage (risk ratio 0.64; 95% confidence interval 0.47-0.88), total operative delivery rate (0.93; 0.88-0.99), and metabolic acidosis rate (0.61; 0.41-0.91).

Key message
Published meta-analyses on studies comparing cardiotocography+ST analysis with cardiotocography only, contained errors in handling of original data, unwarranted inclusions/exclusions of trials, and variable definitions of outcomes. A revised meta-analysis showed reductions in fetal scalp blood sampling, total operative delivery rate, and metabolic acidosis rate in the CTG+ST arm.