

Effectiveness of electronic fetal monitoring with additional ST-analysis in vertex singleton pregnancies beyond 36 weeks of gestation: an individual participant data meta-analysis.

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OBJECTIVE: The purpose of this study was to assess the effectiveness of electronic fetal monitoring (EFM) alone and with additional ST analysis (EFM+ST) in laboring women with a singleton term pregnancy that is in cephalic presentation in the prevention of metabolic acidosis by the application of individual patient data metaanalysis.

STUDY DESIGN: We conducted an individual patient data metaanalysis using data from 4 randomized trials, which enabled us to account for missing data and investigate relevant subgroups. The primary outcome was metabolic acidosis, which was defined as an umbilical cord-artery pH <7.05 and a base deficit that had been calculated in the extra cellular fluid compartment >12 mmol/L. We performed 8 explanatory subgroup analyses for 8 different endpoints.

RESULTS: We analyzed data from 12,987 women and their newborn infants. Metabolic acidosis was present in 57 women (0.9%) in the EFM + ST group and 73 women (1.1%) in the EFM alone group (relative risk [RR], 0.76; 95% CI, 0.53–1.10). Compared with EFM alone, the use of EFM+ST resulted in a reduction in the frequency of instrumental vaginal deliveries (RR, 0.90; 95% CI, 0.83– 0.99) and fetal blood samples (RR, 0.49; 95% CI, 0.44–0.55). Cesarean delivery rates were comparable between both groups (RR, 0.99; 95% CI, 0.91– 1.09). Subgroup analyses showed that EFM+ST resulted in fewer admissions to a neonatal intensive care unit for women with a duration of pregnancy of >41 weeks (RR, 0.61; 95% CI, 0.39–0.95).

CONCLUSION: EFM+ST does not reduce the risk of metabolic acidosis, but it does reduce the need for instrumental vaginal deliveries and fetal blood sampling.