

A comparison of intrapartum automated fetal electrocardiography and conventional cardiotocography - a randomised controlled study.

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OBJECTIVE: To examine whether intrapartum monitoring by means of automatic ST analysis (STAN) of fetal electrocardiography could reduce the rate of neonatal acidemia and the rate of operative intervention during labour, compared with monitoring by means of cardiotocography (CTG).

DESIGN: Randomised controlled trial.

SETTING: Labour ward in tertiary-level university hospital.

SAMPLE: A total of 1483 women in active labour with singleton term fetus in cephalic presentation.

METHODS: Women were randomly assigned to be monitored either by STAN or by CTG. Fetal blood sampling (FBS) was optional in both groups.

MAIN OUTCOME MEASURES: Neonatal acidemia (umbilical artery pH <7.10), neonatal metabolic acidosis (umbilical artery pH <7.05 and base excess <-12 mmol/l) and operative interventions: caesarean section rate, vacuum outlet (VO) rate and FBS rate.

RESULTS: There were no statistically significant differences between the STAN group and CTG group in the incidence of neonatal acidemia (5.8 versus 4.7%) or metabolic acidosis (1.7 versus 0.7%). The caesarean section rate (6.4 versus 4.7%) and the VO rate (9.5 versus 10.7%) were also similar in the STAN and CTG groups. The incidence of FBS was lower ($P < 0.001$) in the STAN group (7.0%) than in the CTG group (15.6%).

CONCLUSIONS: Intrapartum fetal monitoring by means of automatic STAN did not improve the neonatal outcome or decrease the caesarean section rate. However, the need for FBS during labour was lower in the STAN group.