

# Identification of cases with adverse neonatal outcome monitored by cardiotocography versus ST analysis: secondary analysis of a randomized trial.

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**OBJECTIVE:** To evaluate whether correct adherence to clinical guidelines might have led to prevention of cases with adverse neonatal outcome.

**DESIGN:** Secondary analysis of cases with adverse outcome in a multicenter randomized clinical trial.

**SETTING:** Nine Dutch hospitals.

**POPULATION:** Pregnant women with a term singleton fetus in cephalic position.

**METHODS:** Data were obtained from a randomized trial that compared monitoring by STAN® (index group) with cardiotocography (control group). In both trial arms, three observers independently assessed the fetal surveillance results in all cases with adverse neonatal outcome, to determine whether an indication for intervention was present, based on current clinical guidelines.

**MAIN OUTCOME MEASURES:** Adverse neonatal outcome cases fulfilled one or more of the following criteria: (i) metabolic acidosis in umbilical cord artery (pH < 7.05 and base deficit in extracellular fluid >12 mmol/L); (ii) umbilical cord artery pH < 7.00; (iii) perinatal death; and/or (iv) signs of moderate or severe hypoxic ischemic encephalopathy.

**RESULTS:** We studied 5681 women, of whom 61 (1.1%) had an adverse outcome (26 index; 35 control). In these women, the number of performed operative deliveries for fetal distress was 18 (69.2%) and 16 (45.7%), respectively. Reassessment of all 61 cases showed that there was a fetal indication to intervene in 23 (88.5%) and 19 (57.6%) cases, respectively. In 13 (50.0%) vs. 11 (33.3%) cases, respectively, this indication occurred more than 20 min before

the time of delivery, meaning that these adverse outcomes could possibly have been prevented.

**CONCLUSIONS:** In our trial, more strict adherence to clinical guidelines could have led to additional identification and prevention of adverse outcome.