

Clinical experience with CTG and ST analysis of the fetal electrocardiogram - low cord metabolic acidosis rate at a tertiary care centre.

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Background:

Intrapartum surveillance with CTG and ST analysis of the fetal ECG (STAN) reduced the frequency of cord metabolic acidosis at birth and operative delivery for fetal distress in two randomized controlled trials.

Objective:

To evaluate delivery mode and neonatal outcome after STAN monitoring.

Hypotheses:

Intrapartum surveillance with STAN should result in a low frequency of cord artery metabolic acidosis at birth.

Methods:

Retrospective study for the period 01.01.2004-31.12.2006, with data retrieved from maternal and neonatal medical records, and from The Medical Birth Registry of Norway. Inclusion criteria: Singleton pregnancies, gestational age ≥ 36 weeks, STAN monitoring. Exclusion criteria: twin pregnancies.

Results:

During the study period 3236 (22 %) of 14804 deliveries were selected to monitoring with STAN. Of those a total of 1159 (37%) had an operative delivery. 247 newborns (7.6 %) were transferred to the neonatal intensive care unit. Acid base data from the umbilical artery was available in 2586 (80 %) cases. There was a total of 21 (0.8 %) cases of metabolic acidosis at birth, defined as $\text{pH} < 7.05$ and base deficit > 12 mmol/l. In 17/21 cases STAN clinical guidelines indicated intervention at median 24 (8-150) minutes prior to delivery. There were four cases of perinatal death (diaphragmatic hernia, N=1; sepsis, N=2; unknown, N=1). 7/3236 neonates had seizures, but only one of those met the criteria for intrapartum asphyxia.

Conclusion:

The frequency of metabolic acidosis at birth was low. Provided normal signal quality, STAN clinical guidelines indicated intervention in all cases of metabolic acidosis.