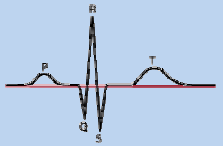
Prevention of intrapartum hypoxia with ST-analysis -10 years' experience at the Turku University Hospital

Susanna Timonen, MD, PhD, susanna.timonen@tyks.fi, **Turku University Hospital, Turku, Finland**

Abstract Number:
268725



Abstract

General Category: Intraparturm Fetal Assessment

Indexing Category: 102. Fetal heart rate monitoring

Objective

To analyze the occurrence of intrapartum hypoxia as defined by cord acidemia (pH <7.05) and metabolic acidosis (pH <7.05 and BDecf >12.0 mmol/L) at the Turku University Hospital setting after the introduction of ST analysis (STAN) as an adjunct to standard CTG.

Study Design

A prospective observational study was conducted between 2001 and 2010.

Of 38 042 deliveries 7076 (18.5%) were monitored with CTG+ST. The main indication for ST analysis was non-reassuring FHR patterns. Cord acid base data was obtained in cases of CTG+ST analysis whereas cord artery pH was available in all deliveries. Fetal blood sampling (FBS) for scalp pH analysis was available at the discretion of the clinician.

Results

Over the 10 years there were 37 cases of metabolic acidosis among those monitored with CTG+ST, 70% (26 cases) of those occurred during the initial four years. Table 1 compares the outcome of those four years with those of the following six years showing a 79% reduction in metabolic acidosis rate of cases monitored with CTG+ST. This improvement occurred in connection with a substantial reduction in usage of fetal scalp pH as an additional source of information when assessing fetal distress. In the total population the general acidosis (cord artery pH <7.05) rate has been reduced as well as the total cesarean section (CS) rate.

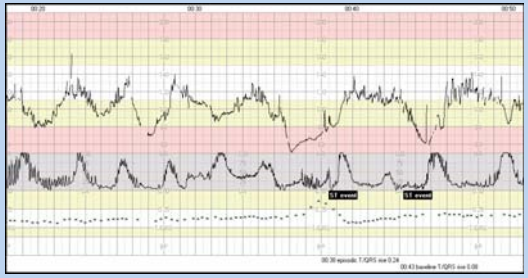
Conclusions

The application of the STAN methodology, structured training and analysis based on high quality CTG+ST data has enabled a paradigm shift in obstetric care with consistently improved outcome.

Study Design

Prospective Observational study - Primary

CTG+ST analysis



Objective

To analyze the occurrence of **intrapartum hypoxia** as defined by cord acidemia (pH <7.05) and metabolic acidosis (pH <7.05 and BDecf >12.0 mmol/L) after the introduction of ST analysis (STAN) as an adjunct to standard CTG.

Material

A prospective observational study, years 2001-2010.
Of 38 041 deliveries 7 076 (18.5%) were monitored with CTG + ST.
The main indication for ST analysis was non-reassuring FHR patterns.
Fetal blood sampling (FBS) for scalp pH analysis was available at the discretion of the clinician.
Cord acid base data was obtained in cases of CTG + ST, cord artery pH was available in all deliveries.

Results

Over the 10 years there were 37 cases of metabolic acidosis among those monitored with CTG+ST, 70% (26 cases) of those occurred during the initial four years. Table 1 compares the outcome of those four years with those of the following six years showing a 79% reduction in metabolic acidosis rate of cases monitored with CTG+ST.

This improvement occurred in connection with a substantial reduction in usage of fetal scalp pH as an additional source of information when assessing fetal distress. In the total population the general acidosis (cord artery pH <7.05) rate has been reduced as well as the total cesarean section (CS) rate.

Table 1.

	deliveries per annum	STAN usage	cord art. met. acid.	FBS rate	cord artery pH <7.05	CS rate	op. vag. delivery rate
2001-2004	3560	16.60%	1.10%	2.3%	1.30%	15.5%	6.7%
2005-2010	3967	19.70%	0.06%	0.6%	0.70%	13.7%	7.6%
OR		1.23	0.21	0.25	0.53	0.86	1.14
95th CI		1.10-1.29	0.10-0.43	0.20-0.30	0.42-0.67	0.82-0.92	1.05-1.24
p (Chi^2)		0.0005	<0.0005	<0.0001	<0.0005	<0.0005	0.0018

Conclusions

The application of the STAN methodology, structured training and analysis based on high quality CTG+ST data has enabled a paradigm shift in obstetric care with consistently improved outcome.