PERINATAL OUTCOME AND FETAL SURVEILLANCE: DATA FROM SWEDISH RCT OF CTG VS. CTG PLUS ANALYSIS OF THE ST WAVEFORM OF THE FETAL ECG

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Background. The aim of intrapartum fetal is to identify fetuses of an adverse outcome based on our understanding of the pathophysiology. ST waveform of the fetal ECG provides continuous information on the ability of the myocardium to respond. Strict clinical guidelines have been tested in two large RCTs. The Swedish RCT was designed with a power to assess potential improvements in neonatal outcome.

Methods. The current analysis focuses on the findings that were associated with the 351 babies that were admitted to the special care baby unit (SCBU). The trial design allowed to test for the effects of growing experience with the new STAN® technology.

Results. Table I gives neonatal outcome according to intention to treat.

Table I

	CTG		CTG+ST	
	Before n =1250	After retraining n = 1197	Before n = 1333	After retraining n = 1186
Perinatal death, excluding lethal malformations	1	0	1	1

Outcome of SCBU visit

Neuromuscular symptoms				
Seizures	1	2	0	0
Increased neuromuscular tone	1	3	0	0
Irritability only	1	0	3	0
Metab acid+ other symptoms	3	7	4	1
Total	**7**	**12**	**8**	**2**
OR, 95% CI p-value				0.17, 0.03-0.78 p = 0.01

The most significant improvements occurred after retraining with enhanced experience of ST analysis. According to the protocol, a secondary analysis was made with the exclusion of neonates with severe malformations and inadequately monitored cases - those monitored for less than 20 min and cases where the monitoring was interrupted more than 20 min before delivery. Table II denotes the outcome among these neonates.

Table II

Neonatal Outcome	CTG		CTG+ST				
Adequate recordings, after	n	%	n	%	Odds ratio	95% CI	P
	1049		1054				
Apgar 1 min <4	23	2.19	8	0.76	0.34	0.14-0.80	0.011
Apgar 5 min >7	13	1.24	8	0.76	0.61	0.23-1.58	0.37
Apgar 5 min <4	5	0.48	0	0.00			0.031
Admissions to SCBU	78	7.44	54	5.12	0.67	0.46-0.98	0.036
Cord artery metab.acidosis	14	1,54	4	0.44	0.28	0.08-0.92	0.032

Conclusion. The STAN® methodology provides significant improvements in perinatal care. The study also demonstrates the need for a structured dissemination of the knowledge and experience behind. This aspect is currently being explored in a EU supported project involving 10 obstetric units. The result of the first 2000 cases shows a neonatal outcome identical to that presented above.