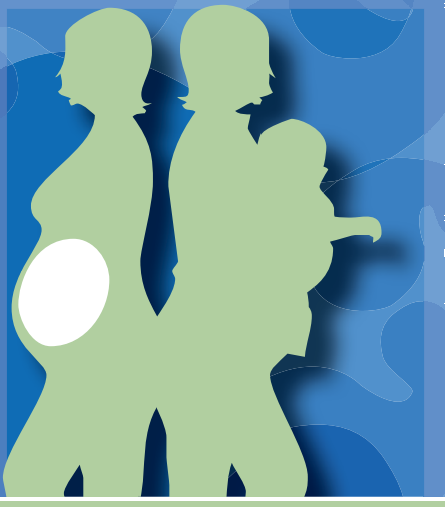
EUROPEAN ASSOCIATION OF
PERINATAL MEDICINE



MAASTRICHT | THE NETHERLANDS

in cooperation with EFCNI

XXV EUROPEAN CONGRESS PERINATAL MEDICINE

ABSTRACT BOOK

June 15th - 18th
2016

was associated with 42% of all cases of subacute hypoxia. 12.1% of fetuses with a subacute hypoxic pattern had an umbilical cord arterial pH <7.0 compared to 7.7% without the subacute hypoxic pattern.
Conclusion: 30% of fetuses demonstrated features of subacute hypoxia on the CTG trace during active maternal pushing. The use of oxytocin or prostaglandins appear to increase the likelihood of subacute hypoxic pattern. Subacute hypoxia which occurs secondary to a combination of repetitive and prolonged compressions of the umbilical cord and reduction in utero-placental oxygenation, which results in a progressively less time spent at the normal baseline fetal heart rate appears to increase the likelihood of lower umbilical cord arterial pH at birth. This may be secondary to reduced time available to expel carbon dioxide and metabolic acid as well as to obtain fresh oxygenated blood from the placental venous sinuses.

Keywords: Cardiotocograph, subacute hypoxic pattern, rate of fall in pH

733

Electronic fetal monitoring during labor: comparison of abdominal fetal electrocardiography and doppler cardiotocography

E. Grossi, P. Antonazzo, V. M. Savasi, and I. Cetin

Unit of Obstetrics and Gynaecology, Hospital Luigi Sacco, via Gb Grassi 74, Milan, Centre for fetal research Giorgio Pardi,

Introduction: Electronic fetal monitoring is a method of fetal well being monitoring during labur. It is the most utilized worldwide. Nerveless it presents a poor sensitivity and limits regarding variability inter- and intra-observer, frequently due to record of undetermined tracks. Recently a non-invasive electronic feta monitoring has been introduced. It is called Monica AN24 (abfECG) and is able to monitor both maternal and fetal heart rate by abdominal ECG and uterine activity by electrohysterography (EHG). This new tool presents superiority in distinguishing fetal and maternal heart rate and it appears more efficacy in obese pregnant. The aim of our study is to compare lecture and clinicians interpretation of fetal heart tracing obtained by these different tools.
Materials and methods: A total of twenty eight simultaneous CTG and abfECG have been evaluated. One expert senior observer calculated the percentage of success of each recording; total amount of small and large accelerations, small and large decelerations and uterine contractions have been counted. Ninety-two traces lasting 30 minutes each have assigned to four clinicians (2 senior and 2 junior) to be classified according to ACOG classification.
Clinical cases & summary results: Overall perceived signal quality was significantly superior for abfECG than CTG Doppler (94.19% vs. 88.23%, p<0.01). The number of small accelerations, small decelerations and uterine contractions detected were greater in the trace obtained using abfECG, while big decelerations were counted fewer times. During second stage of labour, signal quality decreased using both recording methods (85.00% vs. 84.60%, p = 0.638). Given 46 CTG tracks of 30 minutes each and the corresponding abfECG tracks (total: 92 tracks), percentage of agreement (Pa) among 4 observers in interpreting the FHR patterns according to ACOG criteria was calculated. Overall Pa was superior for abfECG than Doppler CTG (47.8% vs. 39.1%), although this difference was not significant. All observers choose the same ACOG category (namely ACOG 1, 2 or 3) in 47.8% of abfECG tracks, and only in 39.1% of Doppler CTG tracks. A bad signal quality hindering the interpretation of the track was reported on average in 8.7% abfECG recording and in 35.9% Doppler recording (p<0.05). On average, in 0.5% of abfECG tracks no ACOG category was attributed due to a bad signal quality, while this happened in 3.8% of Doppler CTG recordings (p<0.05).
Conclusion: Monica AN24, through a better acquisition of the fetal heart rates signal, could provide clearer information about fetal well being and uterine contractions improving the skills of interpretation of the CTG pattern and decreasing variability between clinicians.

Keywords: Electronic fetal monitoring, abdominal CTG, fetal well being, sensitivity.

Table 2. Quality signal

	First and Second Stage of Labour			Second Stage of Labour		
	CTG Doppler	abfECG	p-value	CTG Doppler	abfECG	p-value
FHR success rate (%)	**88.23** ± 12.50 (44 – 99.3)	**94.19** ± 8.86 (60.4 – 100)	<0.01	**84.60** ± 18 (44 – 100)	**85.00** ± 19 (35 – 100)	ns
Small accelerations (n)	**9.6** ± 9.6 (0 – 32)	**31.2** ± 32.1 (0 – 128)	<0.001	**2.2** ± 3.1 (0 – 9)	**4.3** ± 3.5 (0 – 12)	ns
Big accelerations (n)	**14.3** ± 12.6 (0 – 56)	**21.4** ± 22.9 (0 – 114)	0,145	**3.8** ± 4.0 (0 – 13)	**4.8** ± 4.6 (0 – 15)	< 0.05
Small decelerations (n)	**0.4** ± 0.9 (0 – 4)	**8.3** ± 9.8 (0 – 35)	<0.001	**2.3** ± 3.9 (0 – 14)	**1.7** ± 2.5 (0 – 10)	ns
Big decelerations (n)	**8.3** ± 7.0 (0 – 25)	**5.2** ± 7.2 (0 – 24)	<0.001	**5.0** ± 5.1 (0 – 18)	**1.7** ± 1.3 (0 – 5)	0,003
Uterine contractions (n)	**31.6** ± 37.9 (0 – 140)	**76.4** ± 58.55 (0 – 232)	<0.001	**7.1** ± 9.4 (0 – 36)	**22.4** ± 10.9 (5 – 46)	<0.001