

Clinical Outcomes of High-risk Labours Monitored Using Fetal Electrocardiography.

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ABSTRACT

Objectives: The aim of the study was to review clinical and laboratory outcomes of a cohort of fetuses monitored during high-risk labours, simultaneously by fetal electrocardiography (FECG) and routine cardiotocography (CTG).

Materials and Methods: Eighty-three parturients from the Department of Obstetrics and Gynecology of Medical University were included in the clinical study. Inclusive criteria to the study group were: (i) singleton pregnancy at term (between 37 and 42 weeks' gestation), (ii) longitudinal fetal lying, (iii) more than 2500 g of estimated fetal weight, (iv) meconium-stained liquor, and (v) induction of labour due to fetal indications. Fetal outcome parameters analysed included Apgar scores at 1st, 5th and 10th minute after birth, cord artery acid-base assessment and lactate concentrations analysis. FECG was performed during labour, until the neonate was born, with the use of single spiral scalp electrode connected to the STAN S21 heart monitor. Immediately after delivery, arterial cord blood gas and venous cord blood lactate's concentrations were analysed.

Results: The sensitivity (100%), specificity (97%), negative predictive value (NPV) (100%) and positive predictive value (33%) were higher for FECG than for CTG. Moreover, several significant correlations between episodic/baseline T/QRS ratio rises and cord artery acid-base as well as lactate concentrations were demonstrated.

Conclusions: Correlations between episodic/baseline T/QRS ratio rises and fetal outcome parameters indicate that observed changes in FECG reflect neonatal metabolic lactate acidosis. The high sensitivity, specificity and especially very high NPV are proof that FECG serves as a reliable method for electronic fetal monitoring during high-risk labours.

Key words: Fetal asphyxia, STAN system