

# Analysis of current methods of diagnosing intrapartum fetal hypoxia

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The aim of study was to evaluate the specificity of current methods of diagnosing intrapartum fetal hypoxia (CTG, Fp02' and ST-analysis of ECG). Between April 2003 and March 2004, we evaluated the results of synchronous fetal monitoring using CTG, Fp02 and STAN. ST 21 in 53 patients with high risk or pathologic labor. We evaluated which of the methods most accurately predicts intrapartum fetal hypoxia. For statistical analysis (p-sign test and Mc Namara test) we determined whether the method correctly or incorrectly predict values of Apgar score at 1 minute, pH in the umbilical artery, and lactate level.

Further, the results of the three methods were evaluated in postnatal depression, amniotic fluid meconium staining, and how the individual methods were made use of in indicating the termination of pregnancy. In comparison with CTG there was a statistically significant higher specificity in Fp02 and STAN in evaluating the Apgar score at 1 minute [Fp02 ( $p=0.007$ ) and STAN ( $p < 0.001$ )], in determining pH(a) from umbilical blood [Fp02 ( $p=0.029$ ) and STAN ( $p < 0.001$ )], and the incidence of postnatal depression of the neonate at 30-60 minutes after delivery [Fp02 ( $p=0.019$ ) and STAN ( $p=0.005$ )]. Changes in lactate levels in umbilical blood were better predicted by STAN ( $p=0.001$ ). Fp02 evaluated the changes similarly as CTG. Imminent hypoxia in the case of strongly meconium stained amniotic fluid was evaluated correctly only by STAN ( $p=0.002$ ). The evaluation of Fp02 was not statistically significant. Among the individual methods, no statistically significant difference was found in the indication for operative termination of pregnancy.

The results clearly demonstrate that using other methods of diagnosing intrapartum fetal hypoxia, fetal pulse oximetry and ST-analysis of fetal ECG, make the diagnosis more accurate. Introduction of these methods requires correct interpretation and the attempt of the obstetrician to utilize these methods in clinical practice.