

[Int J Gynaecol Obstet.](#) 2007 May; 97(2): 110-4. Epub 2007 Mar 26.

Fetal electrocardiogram ST-segment analysis and prediction of neonatal acidosis.

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OBJECTIVE: To determine the diagnostic value of fetal ST-segment analysis (STAN) in predicting neonatal acidosis.

METHODS: The STAN S21 was used to monitor singleton fetuses in labor with abnormal FHR. Physicians later reviewed tracings to identify any ST events dictating intervention. Outcome measures were umbilical artery pH < or = 7.15 and pH < or = 7.05 at birth. The sensitivity, specificity, PPV, and NPV of a significant ST event to predict both outcomes were calculated.

RESULTS: Analysis included 411 women. Sensitivity of a significant ST event for screening pH < or = 7.15 (21.9%) was 38% (41/108), specificity 83% (252/303), PPV 45% (41/92) and NPV 79% (252/319), and for pH < or = 7.05, it was (3.4%), 62.5% (10/16), 79% (313/395), 11% (10/92), and 98% (313/319), respectively.

CONCLUSION: In a population with abnormal FHR in labor, STAN sensitivity is moderate (almost 40%) for predicting pH < or = 7.15 and better (almost 60%) for more severe acidosis (pH < or = 7.05).