

# Review of the first 1502 cases of ECG-ST waveform analysis during labour in a teaching hospital.

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**OBJECTIVE:** To assess the impact of introduction of the STAN monitoring system.

**STUDY DESIGN:** Prospective observational study.

**SETTING:** Tertiary referral labour ward, St George's Hospital, London.

**POPULATION:** High-risk term pregnancies.

**METHODS:** We report all consecutive cases of intrapartum monitoring using the STAN S 21 fetal heart monitor. Cases with adverse neonatal outcome were evaluated in relation to the ST waveform analysis and cardiotocography (CTG).

**MAIN OUTCOME MEASURES:** Cord artery metabolic acidosis, neonatal encephalopathy (NNE) and reasons behind cases with poor outcome.

**RESULTS:** Between 2002 and 2005, there were 1502 women monitored by STAN. Based on combined STAN analysis in the 1502 women, action was indicated in 358 women (23.8%), while in 1108 women (73.8%) no action was indicated. Traces were not interpretable in 36 women (2.4%). Of the 836 cases (55.7%) where cord blood gases were available, there were 23 cases (2.8%) of metabolic acidosis and 16 of these (70%) were identified by STAN. Overall, there were 14 cases of NNE monitored by STAN. Retrospective analysis of these highlights human errors, such as poor CTG interpretation, delay in taking appropriate action and not following the guidelines.

**CONCLUSIONS:** Our experience suggests the need for more intense training on interpretation of CTG and strict adherence to guidelines.