

# New FIGO and Swedish intrapartum cardiotocography classification systems incorporated in the fetal ECG ST analysis (STAN) interpretation algorithm: agreements and discrepancies in cardiotocography classification and evaluation of significant ST events.

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## Abstract

The updated intrapartum cardiotocography (CTG) classification system by FIGO in 2015 (FIGO2015) and the FIGO2015-approached classification by the Swedish Society of Obstetricians and Gynecologist in 2017 (SSOG2017) are not harmonized with the fetal ECG ST analysis (STAN) algorithm from 2007 (STAN2007). The study aimed to reveal homogeneity and agreement between the systems in classifying CTG and ST events, and relate to maternal and perinatal outcomes MATERIAL AND METHODS: Among CTG traces with ST events, 100 traces originally classified as normal, 100 as suspicious and 100 as pathological were randomly selected from a STAN database and classified by two experts in consensus. Homogeneity and agreement statistics between the CTG classifications were performed. Maternal and perinatal outcomes were evaluated in cases with clinically hidden ST data (N=151). A two-tailed  $p < 0.05$  was regarded significant RESULTS: For CTG classes, the heterogeneity was significant between the old and new systems, and agreements were moderate-strong (proportion of agreement, kappa index 0.70-0.86). Between the new classifications, heterogeneity was significant and agreements strong (0.90, 0.92). For significant ST events, heterogeneities were significant and agreements moderate to almost perfect (STAN2007 vs. FIGO2015 0.86, 0.72; STAN2007 vs. SSOG2017 0.92, 0.84; FIGO2015 vs. SSOG2017 0.94, 0.87). Significant ST events occurred more often combined with STAN2007 than with FIGO2015 classification, but not with SSOG2017; correct identification of adverse outcomes was not significantly different between the systems CONCLUSIONS: The old and new systems classified CTG patterns and significant ST events discrepantly. It remains to show the clinical relevance of the findings. This article is protected by copyright. All rights reserved.