

Inter-observer agreement in clinical decision-making for abnormal cardiotocogram (CTG) during labour: a comparison between CTG and CTG plus STAN

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ABSTRACT

Objective: To compare inter-observer agreement for clinical decision-making with cardiotocography (CTG) and combined CTG with ST-segment analysis (STAN).

Design: Experimental study.

Setting: Three hospital obstetrics departments in France.

Population: Thirty randomly selected nonreassuring CTG recordings during labour of women with singleton term pregnancies in cephalic position.

Methods: Seven obstetricians independently assessed the tracings, displayed in a random order on their computers, on two separate sessions, the first without and the second with STAN information. The observers received clinical information about the labour as the tracings continued and were asked whether they would intervene. For analysis, we considered that intervention was justified for the neonates with pH < 7.05 and that nonintervention was justified for those with a pH > 7.10 after spontaneous delivery.

Main outcome measures: Kappa values and rates of inter-observer agreement for intervention and for nonintervention.

Results: Kappa for inter-observer agreement was 0.50 (0.29-0.69) with CTG, and 0.67 (0.48-0.81) with CTG + STAN. The rate of inter-observer agreement for the decision to intervene was 73% (68-77%) with CTG and 70% (66-75%) with CTG + STAN ($P = 0.4$), and for the nonintervention decision it was 48% (42-54%) and 69% (64-74%), respectively ($P < 0.0001$). The rate of agreement for justified intervention was 94% (91-97%) with CTG and 85% (80-90%) with CTG + STAN ($P < 0.001$) and for justified nonintervention, 56% (48-63%) with CTG and 84% (79-89%) with CTG + STAN ($P < 0.0001$).

Conclusions: In cases with abnormal CTG, ST analysis may improve consistency in clinical decision-making and decrease unnecessary interventions, but may also lead on rare occasions to unjustified decisions not to intervene.