

Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour.

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Update of

- [Continuous cardiotocography \(CTG\) as a form of electronic fetal monitoring \(EFM\) for fetal assessment during labour.](#) [Cochrane Database Syst Rev. 2006]

Abstract

BACKGROUND: Cardiotocography (known also as electronic fetal monitoring), records changes in the fetal heart rate and their temporal relationship to uterine contractions. The aim is to identify babies who may be short of oxygen (hypoxic), so additional assessments of fetal well-being may be used, or the baby delivered by caesarean section or instrumental vaginal birth.

OBJECTIVES: To evaluate the effectiveness of continuous cardiotocography during labour.

SEARCH METHODS: We searched the Cochrane Pregnancy and Childbirth Group Trials Register (31 December 2012) and reference lists of retrieved studies.

SELECTION CRITERIA: Randomised and quasi-randomised controlled trials involving a comparison of continuous cardiotocography (with and without fetal blood sampling) with (a) no fetal monitoring, (b) intermittent auscultation (c) intermittent cardiotocography.

DATA COLLECTION AND ANALYSIS: Two review authors independently assessed study eligibility, quality and extracted data from included studies.

MAIN RESULTS: Thirteen trials were included with over 37,000 women; only two were judged to be of high quality. Compared with intermittent auscultation, continuous cardiotocography showed no significant improvement in overall perinatal death rate (risk ratio (RR) 0.86, 95% confidence interval (CI) 0.59 to 1.23, n = 33,513, 11 trials), but was associated with a halving of neonatal seizures (RR 0.50, 95% CI 0.31 to 0.80, n = 32,386, nine trials). There was no significant difference in cerebral palsy rates (RR 1.75, 95% CI 0.84 to 3.63, n = 13,252, two trials). There was a significant increase in caesarean sections associated with continuous

cardiotocography (RR 1.63, 95% CI 1.29 to 2.07, n = 18,861, 11 trials). Women were also more likely to have an instrumental vaginal birth (RR 1.15, 95% CI 1.01 to 1.33, n = 18,615, 10 trials). Data for subgroups of low-risk, high-risk, preterm pregnancies and high-quality trials were consistent with overall results. Access to fetal blood sampling did not appear to influence the difference in neonatal seizures nor any other prespecified outcome.

AUTHORS' CONCLUSIONS: Continuous cardiotocography during labour is associated with a reduction in neonatal seizures, but no significant differences in cerebral palsy, infant mortality or other standard measures of neonatal well-being. However, continuous cardiotocography was associated with an increase in caesarean sections and instrumental vaginal births. The challenge is how best to convey these results to women to enable them to make an informed choice without compromising the normality of labour.