

Fetal vibroacoustic stimulation for facilitation of tests of fetal wellbeing

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Plain language summary

Acoustic stimulation of unborn babies may make tests on their well-being more effective

Tests on unborn babies such as ultrasound and heart rate are carried out to check their well-being. As a baby's sleep periods can alter those results, various methods are used to wake the baby. Fetal vibroacoustic stimulation uses a hand held electronic device placed just above the pregnant woman's stomach. Brief sounds are sent through her stomach to her baby. The review of trials found this method improves the effectiveness of the baby's heart rate testing without changing the test's reliability. More research is needed, especially into any possible adverse effects.

Abstract

Background

Acoustic stimulation of the fetus has been suggested to improve the efficiency of antepartum fetal heart rate testing.

Objectives

To assess the merits or adverse effects of the use of fetal vibroacoustic stimulation in conjunction with tests of fetal well-being.

Search strategy

We searched the Cochrane Pregnancy and Childbirth Group trials register (July 2003).

Selection criteria

All published and unpublished randomized controlled trials assessing the merits of the use of fetal vibroacoustic stimulation in conjunction with tests of fetal well-being.

Data collection and analysis

Both reviewers independently extracted data and assessed trial quality. Authors of published and unpublished trials were contacted for further information.

Main results

A total of nine trials with a total of 4838 participants were included. Fetal vibroacoustic stimulation reduced the incidence of non-reactive antenatal cardiotocography test (seven trials; relative risk (RR) 0.62, 95% confidence interval (CI) random 0.52 to 0.74) and reduced the overall mean cardiotocography testing time (three trials; weighted mean difference (WMD) -9.94 minutes, 95% CI -9.37 minutes to -10.50 minutes). Vibroacoustic stimulation compared with mock stimulation evoked significantly more fetal movements when used in conjunction with fetal heart rate testing (one trial, RR 0.23, 95% CI 0.18 to 0.30).

Authors' conclusions

Vibroacoustic stimulation offers benefits by decreasing the incidence of non-reactive cardiotocography and reducing the testing time. Further randomized trials should be encouraged to determine not only the optimum intensity, frequency, duration and position of the vibroacoustic stimulation, but also to evaluate the efficacy, predictive reliability, safety and perinatal outcome of these stimuli with cardiotocography and other tests of fetal well-being.

Source: The Cochrane Collaboration