



Central Electronic Foetal Monitoring: Are we improving perinatal outcomes?

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Introduction

Central electronic foetal monitoring (CEFM) is a computerised system that incorporates multiple CTG monitoring with additional variables such as foetal electrocardiogram ST-segment, maternal vital signs, labour progress and blood gas sampling. There is limited and inconsistent evidence regarding the impact of CEFM on maternal and perinatal outcomes in childbirth.

Aim

To determine if the introduction of CEFM system at a tertiary facility (Gold Coast University Hospital) has reduced adverse maternal and perinatal outcomes.

Methodology

Retrospective 12 months data was collected for pre-CEFM introduction vs. post-CEFM. 4962 patients met inclusion criteria, 2350 in the pre-CEFM group and 2612 in the post-CEFM group. Outcomes measured included:

- mild acidosis (umbilical artery lactate 5.2-10mmol/L)
- significant acidosis (umbilical artery lactate >10mmol/L)
- Apgar <4 at 5 min or <7 at 5 min
- admission to neonatal intensive care unit (NICU) or special care nursery (SCN)
- mode of delivery (ventouse, forceps, caesarean section, vaginal delivery)

Inclusion criteria	Exclusion criteria
Requires continuous CTG monitoring in labour as per clinical practice guidelines regardless of gest. age	Does not require continuous CTG monitoring in labour as per clinical practice guidelines
Singleton gestation	Multiple gestation
Cephalic presentation	Malpresentation
Mention of SCN/NICU admission	Missing maternal and neonatal data
Spontaneous or induced labour	Planned caesarean section

Results

- NO difference in mild acidosis (18.2% vs 19.6%) or significant acidosis (1.2% vs 1.2%), $p=0.428$.
- NO difference in low Apgar scores (1.5% vs 1.7%), $p=0.847$, though reduction in admission to SCN/NICU (24.7% vs 20.6%), $p<0.001$.
- NO difference in mode of delivery ($p=0.583$); caesarean section (17.3% vs 18.2%), instrumental delivery (19.5% vs 18.5%).

Discussion

- CEFM has NOT changed maternal or foetal outcomes.
- Reduction in SCN/NICU admission possibly related to other criteria rather than intrapartum-related outcomes.
- Given the limited funding in rural/regional maternity centres, installation of CEFM systems is expensive and may not improve the perinatal outcomes.

References

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