



Assessment of fetal movements by the actograph and fetoplacental Dopplers

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Objective

To quantify actograph output in healthy third trimester pregnancies and investigate this in relation to fetoplacental Dopplers.

Methods

42 women between 24 to 34 weeks of gestation underwent ultrasound scan followed by a computerized cardiotocograph (CTG). Post-capture analysis of the actograph recording was performed and expressed as a percentage of activity over time. The actograph output results were analysed in relation to the pulsatility indices of umbilical and middle cerebral artery Dopplers. The values were expressed as z score normalized for gestation.

Results

There was a significant association between actograph activity and umbilical artery pulsatility index Z score ($R = -0.306$, $p = 0.049$). A negative correlation was also observed with actograph activity and middle cerebral artery pulsatility index Z score ($R = -0.390$, $p = 0.011$).

Conclusion

Fetal movements assessed by the actograph are associated with placental resistance, as reflected by the pulsatility index of the umbilical artery Doppler. Within our cohort, all umbilical artery Doppler values were within the normal range, and hence the association of fetal movements may prove a useful tool in assessing more subtle changes in placental perfusion that would not otherwise be detected by Doppler alone. The association of cerebral redistribution in fetuses which are more active, are consistent with previous reports in the literature.