Evidence Synthesis Ireland Fellowship Scheme
Review Identification Form

Review Centre/Group Mentor

Prof Valerie Smith, University College Dublin

Review title

Association between reduced fetal movements in pregnancy and longer-term child outcomes: a systematic review

Review type and methods

Type of review: Quantitative/ Prognosis review evaluating associations. The review will be guided by Cochrane Prognosis Group review methods Synthesis methods: Meta-analysis (as feasible) Methods that the Fellow is expected to learn: • Developing and implementing a search strategy • Screening • Risk of Bias/Quality Assessment of included studies. • Data synthesis (meta-analysis, as feasible) • Write-up and report; submission to a Journal for publication.

Review details

Background A recent systematic review involving 39 studies, reported significant increases in stillbirth, small for gestational age, induction of labour, assisted vaginal birth and caesarean section in women who experienced reduced fetal movements (RFM) in pregnancy.[1] While informative for providing evidence on immediate and short-term outcomes associated with RFM, less is understood about the possible longer-term impacts of RFM for neonates born to this cohort of women. Understanding possible longer-term effects of RFM in pregnancy into infancy and early childhood will be helpful for clinician awareness and health care planning. ***Objective***

To evaluate longer-term neurological disease or morbidity in infants who experienced RFM in pregnancy. RFM may be maternal reported or ultrasound detected. The longer-term follow-up period in this review is defined as ≥ 1 year to 5 years after-birth.

PECOS

Studies of any design will be eligible for inclusion if they report on infants who are 1-5 years of age (**P**opulation) who had RFM in pregnancy (≥ 24 weeks) (**E**xposed) compared to infants who did not have RFM (**C**omparator). **O**utcome of interest are neurological morbidities pre-defined according to the International Classification of Diseases.[3]

Methods

The review will use guidance and the available resources developed by the Cochrane Prognosis Methods Group (https://methods.cochrane.org/prognosis/tools). Included studies will be assessed using the Quality in Prognosis Studies (QUIPS) tool.[2] Data will be independently extracted by the Fellow and one other reviewer from each included study using a pre-designed data extraction form. Assuming the inclusion of different study designs and the need to control for confounding in non-randomised studies which may or may not have been done, the generic inverse variance (GIV) method will be used to combine all outcome data. Where studies report odds ratios (ORs) adjusted for confounding, we will use the adjusted summary statistic in the meta-analysis. Anticipating possible clinical and methodological variation, all analyses will be performed using the random effects model. If a meta-analysis is not possible or meaningful (e.g., due to substantive heterogeneity), the results will be reported narratively.

References

1. Carroll L, Gallagher L, Smith V. Pregnancy, birth and neonatal outcomes associated with reduced fetal movements: A systematic review and meta-analysis of non-randomised studies. 2023; 116: 103524. https://doi.org/10.1016/j.midw.2022.103524
2. Hayden JA, van der Windt DA, Cartwright JL, Côté P, Bombardier C. Assessing bias in studies of prognostic factors. Ann Intern Med. 2013; 158:4, 280-286. https://doi/org/10.7326/0003-4819-158-4-201302190-00009
3. Zamstein O, Wainstock T, Sheiner E. Decreaed fetal movements: Perinatal and long-term neurological outcomes. EJOGRB, 2019; 241 https://doi.org/10.1016/j.ejogrb.2019.07.034

Review current status

Not started, although PROSPERO registration is planned for the coming weeks

Any specific/desirable requirements for fellow

None specifically; the Fellow will be mentored through all aspects of the review irrespective of past/current experience, although knowledge of the topic area would be helpful.

Estimated start and completion dates

Start: One month from appointment of Fellow

Completion: Within 12 months of start date