

# Exercise vs metformin for gestational diabetes mellitus: Protocol for a network meta-analysis

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**INTRODUCTION:** The purpose of this protocol is to provide a network meta-analysis methodology that compares the effects of metformin and physical exercise in the prevention and treatment of gestational diabetes mellitus (GDM) and its associated fetal and maternal morbidity. **METHODS**

**AND ANALYSIS:** This protocol conforms to the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) and the recommendations of the Cochrane Collaboration Handbook. An electronic search will be conducted in MEDLINE, EMBASE, Web of Science and the Cochrane Library, from the inception until July 2019. There will be no language restrictions. The Cochrane Collaboration tool for assessing risk of bias (RoB2) and the quality assessment tool for quantitative studies will be used. The Grading of Recommendations, Assessment, Development and Evaluation scale will be used to evaluate the strength of the evidence. A Bayesian network meta-analysis will be carried out, which allows direct and indirect comparison of the interventions, for the risk of GDM, prematurity, caesarean section, macrosomia, hypertensive disorders, insulin requirement, and differences in basal glucose, maternal weight, and weight of the newborn.

**DISCUSSION:** With this protocol, a methodology is established that resolves the limitations of previous meta-analysis. It will be possible to determine the difference of effect between physical exercise and metformin in the main outcomes of the GDM, as well as the type and intensity of the

exercise, and the dose of metformin, more effective. ETHICS AND DISSEMINATION: The data included in the network meta-analysis will be obtained from trials that meet accepted ethical standards and the Declaration of Helsinki. The results will be published in a peer-reviewed journal. The evidence obtained could be included in the guidelines of clinical practice in pregnancy.

STRENGTHS AND LIMITATIONS: A comprehensive methodology is established for the analysis, through network meta-analysis, of the comparative efficacy of metformin and physical exercise in gestational diabetes mellitus. The results obtained could help medical professionals by establishing the best evidence-based interventions which may be recommended for these population groups.

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