

FREE PAPER ORAL PRESENTATIONS DAY 2 - SATURDAY, 11 NOV 2017

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Effectiveness of Metformin compared to Insulin to Improve Glycemic Control and Prevent Adverse Maternal and Fetal Outcomes Among Patients with Gestational Diabetes Mellitus (GDM): A systematic review and meta-analysis

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Objective:

To determine the effectiveness and safety of metformin compared to insulin in the management of gestational diabetes mellitus (GDM) in terms of glycemic control, as well as maternal and fetal outcomes.

Methods:

A meta-analysis was conducted on clinical trials of metformin versus insulin in patients with gestational diabetes mellitus using RevMan 5.3 software. Of the 76 articles identified, 11 met eligibility criteria involving 1880 patients.

Results:

Pooled data showed a non-significant trend towards improvement of glycemic control in the metformin group in terms of HbA1c (-0.03% [-0.09%, 0.03%]; $p=0.31$). Among the maternal outcomes, there were significantly less events of preeclampsia in the metformin group (OR 0.45 [0.28,0.71]; $p=0.0008$). There were less births via cesarean section in the metformin group (OR 0.99 [0.68,1.43]) but results were not significant ($p=0.94$). Among the neonatal outcomes, there were significantly less neonates with birth weights of $>4\text{kg}$ (OR 0.69 [0.48,0.98]; $p=0.04$), less NICU admissions (OR 0.71 [0.55,0.91]; $p=0.005$), and less jaundice (0.60[0.36,0.99] $p=0.04$) in the metformin group. There was no significant difference between the metformin and insulin groups in terms of neonatal respiratory distress syndrome, neonatal hypoglycemia and prematurity.

Conclusion:

The use of metformin and insulin are equally effective for glycemic control in patients with GDM. However, metformin is shown to have better neonatal and maternal safety profile based on the results of this meta-analysis.