

To evaluate the effectiveness of interventions on delaying the onset of T2DM in women with a history of GDM

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Background/ Purpose

Gestational diabetes mellitus (GDM) occurs due to the sudden onset of glucose intolerance and insulin resistance during pregnancy. Approximately 50% of women with GDM are at risk of developing type 2 diabetes mellitus (T2DM), especially those with higher body mass index and increased age. Early lifestyle interventions in pregnancy have shown positive outcomes for both the mother and offspring. However, challenges persist in recruitment, adherence, and retention to these interventions.

Methods

Integrative literature review with the utilization of MESH search on PubMed for study selection, based on interventions for delaying the onset of T2DM in women with history of GDM. When searching for "Diabetes, Gestational"[Mesh] AND "Diabetes Mellitus, Type 2"[Mesh] AND "Metformin"[Mesh], 43 articles were identified. Once filtered to a 5-year period and randomized controlled trial article type, 8 articles were identified. Next, searching with ("Diabetes, Gestational"[Mesh]) AND "Diabetes Mellitus, Type 2"[Mesh] AND "Lifestyle Modifications"[Term], one article was found. Lastly, when searching with (("Diabetes, Gestational"[Mesh]) AND "Diabetes Mellitus, Type 2"[Mesh]) AND "Dietary Supplements"[Mesh], 13 articles were found.

Results

Use of metformin (850 mg twice daily) and a placebo in diabetes prevention resulted in 37.4% risk of T2DM in the placebo group than the treatment group by 20.0%. Overall, the use of metformin was significant with an overall decrease in more than 5% body weight at 12 months. Moreover, the incorporation of lifestyle modifications led to reduced GDM in overweight women through a 90-min per week cycling programme, initiated in early pregnancy. In addition, there was a 43% reduction in the development of T2DM for interventions implemented within 3 years postpartum. Along with lifestyle modifications, the effects of additional supplements led to a significant reduction in fasting glucose and reduced HbA1C; along with a significant improvement in glycolipid metabolism in gestational diabetes.

Conclusion

Women with a history of gestational diabetes mellitus (GDM) who participate in interventions like metformin intake, lifestyle modifications, or supplements experience a notable decrease in the risk of developing type 2 diabetes mellitus (T2DM). However, those who are unwilling to adopt these interventions may not experience the same outcomes. Educating women about the correlation between GDM and T2DM, as well as the effectiveness of these interventions is crucial in reducing the incidence of T2DM in this population.