

Outcomes of pregnancies treated with Oral Acarbose for Treatment of Gestational Diabetes Mellitus

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OBJECTIVE: The American College of Obstetricians and Gynecologists currently recommends insulin or oral agents (in particular Metformin & Glyburide) as first line therapy for GDM. Used in Type 2 Diabetes, Acarbose helps to decrease post-prandial hyperglycemia by acting to decrease carbohydrate absorption in the intestines. Although not currently a standard recommended treatment for GDM, it's minimal systemic absorption would theoretically decrease fetal exposure and gives Acarbose potential as an additional therapeutic option for the treatment of GDM. We hypothesize women with GDM treated with Acarbose will have similar maternal & neonatal outcomes compared to those treated with Glyburide, and may need to transition to insulin therapy at decreased rates.

METHODS: Utilizing patient medical records from the University of Cincinnati Diabetes in Pregnancy Program, this retrospective cohort study included 189 patients treated for GDM class A2 from 2010 to 2014 (n = 64 Glyburide alone, n = 79 Acarbose plus Glyburide, n = 46 Acarbose alone). Patients with pre-gestational Diabetes Mellitus or serious health conditions were excluded. The primary maternal outcomes were rates of oral agent failure (insulin needed in glycemic control) and cesarean delivery. Additionally, neonatal rates of macrosomia and infants large for gestational age were compared between groups.

RESULTS: The rate of transition to insulin was low in all GDM patients treated with oral agents (4% Acarbose, 6% Acarbose/Glyburide, 3% Glyburide alone), much lower than the rate of transition to insulin quoted in large clinical trials of traditional oral agents (20% using Glyburide or Metformin). Rates of cesarean delivery were similar between oral agent treatment groups (48% Acarbose, 52% Acarbose/Glyburide, 44% Glyburide), as well as macrosomia and LGA.

CONCLUSIONS: No significant difference was found in the rates of negative outcomes between groups. However, the rate of failure to insulin due to inadequate glycemic control on oral agents was significantly lower than the national average – a mere 3-6% of patients compared to the 20% failure seen in the Australian Carbohydrate Study. We speculate low transition rates might be due the use of Acarbose as an additional therapeutic agent.

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