In pregnancies with overweight/obese gestational diabetes: Basal-bolus insulin therapy reduces maternal excessive triglyceride rise

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One of the mechanisms for unrelenting macrosomia in the offspring of overweight or obese mothers with glucose-controlled gestational diabetes (GDM) is an excessive rise of maternal triglycerides (TG) during pregnancy.

Objectives: To ascertain if basal-bolus insulin therapy (BBIT) or other component of GDM treatment (limitation of weight gain, Metformin), were capable of reducing this excessive rise of TG in GDM.

Methods: In a longitudinal-retrospective fashion, we studied 131 singleton GDM pregnancies by means of Stepwise multiple linear regression, which determined that only BBIT (p= 0.011) -and no other aspect of treatment- was related to a decrease in maternal TG Z-Scores. Thereafter, we divided the 131 GDM pregnancies in 2 groups: No-BBIT (n=58, BMI 20-24.9 Kg × m⁻²), and BBIT (n=71, BMI ≥25.0 Kg × m⁻². We also calculated Atherogenic Index of Plasma (AIP, an indirect measure of cholesterol-ester transfer protein, CETP activity) as Log₁₀(TG/HDL), where HDL is high-density lipoprotein cholesterol.

Newly Observed Findings: [a] Only BBIT treatment -but neither limitation of weight gain nor Metformin- was capable to decrease maternal TG Z-scores, by doing so in a dose-related fashion (RSpearman=-0.221; p= 0.03). [b] The AIP remained within normal ranges for pregnancy, being similar in both groups (p=0.9).

Conclusions: Basal-bolus insulin therapy reduces the excessive rise of maternal triglycerides in overweight-obese GDM mothers with tight glycemic control. This beneficial effect of insulin is not related to changes in the CETP activity.

Biography

Pablo R Olmos finished his Internal Medicine Residency in 1987, plus Endocrinology Fellowship at The Ohio State University (OSU) College of Medicine in 1993, plus a MS degree in Biomedical Engineering at OSU College of Engineering. He has published 49 papers in both national and international journals, plus 1 book and 5 book chapters.

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