

Title: Glucose Tolerance during Pregnancy and Birth Weight in a Hispanic Population.

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Abstract

Objective: To assess the effect of screening glucose values and gestational diabetes mellitus (GDM) on birth weight in a community-based population of pregnant Hispanic women and infants in Detroit, Michigan.

Methods: In a prospective cohort study of 372 mother-infant pairs, analysis of variance and multiple linear and logistic regression were used to examine the effects of maternal screening glucose and GDM status on mean birth weight and the risk of large for gestational age (LGA) and small for gestational age (SGA) births.

Results: Screening glucose values of at least 135 mg/dL were found in 26.6% of the mothers and GDM in 5.1%. There was a significant relation between increasing maternal screening glucose level and adjusted mean birth weight ($P < .005$). As glucose level increased, there was a significant trend toward an increasing percentage of LGA infants and a decreasing percentage of SGA infants (Cochran-Armitage test for trend, $P = .001$ and $P = .009$, respectively). Among nondiabetic women, a 10-mg/dL increase in glucose value was associated with an adjusted 30.5-g increase in birth weight (standard error 9.0; $P < .001$), increased adjusted odds of LGA (adjusted odds ratio [OR] 1.17; 95% confidence interval [CI] 1.02, 1.34), and decreased adjusted odds of SGA (adjusted OR 0.69; 95% CI 0.52, 0.93).

Conclusion: Our findings showed a high prevalence of glucose abnormality and an independent effect of maternal glucose level on birth weight in our Hispanic population. Maternal glucose level should be included in studies of factors that affect birth weight, and appropriate prenatal care provided to Hispanic women with abnormal and borderline metabolic status.