Journal of Clinical Diabetes

詵鈴樜巜徵徹樤憖齢緑映俔嬸艪軆躵凘潩瀐虋鏈凘曯瀻滲藹纙婕浘梠勲騁冎曣徰

Ke w d : Oral glucose tolerance test; Insulin action; Hyperinsulinemia; GDM

I d c i

Women with GDM are at an increased risk of caesarean delivery, while their infants tend to experience higher rates of macrocosmic and shoulder dystocia. Abnormal fatal growth in diabetic pregnancy seems to occur with any elevation in the maternal glucose level. Pregnant women with elevated glucose levels have a higher risk of delivering increased birth weight infants [1], even when their glucose levels are below those diagnostic of GDM. Pregnant women with impaired glucose tolerance exhibit insulin resistance comparable to women with GDM, and have an increased risk of macrocosmic infants and other morbidities. It has been suggested that even minor degrees of increased glucose intolerance during pregnancy in women without GDM are related in a continuous and graded pattern with a significantly increased incidence of microsomal, caesarean section, pre-eclampsia and an increased need for neonatal intensive care unit admission, as well as greater length of maternal and neonatal hospital stay. Women of ethnic minority populations are at a greater risk for developing GDM. Found that the risk of GDM increased among non-Caucasian women in the Nurses' Health Study Cohort II. A significant interaction between glucose status and race was identified by Saldana et al. so their analyses were stratified by race looking at African-American and Caucasian mothers separately. Obesity-related risks during pregnancy were also found to vary by race [2], with obese AA women more likely to have adverse outcomes than obese Cau women. Other researchers report the racially disparate effects of impaired glucose tolerance and glucose levels on birth outcomes, with these conditions leading to higher levels of macrosomic babies among AA women, but not among cau women. Gravid as with GDM generally demonstrate higher degrees of post-pregnancy insulin resistance, β-cell dysfunction, higher BMI, central obesity, Notably, the diagnosis of GDM, based on glucose values from an antepartum OGTT, identifies a population of young women at elevated risk of developing diabetes later in life Reported that insulin sensitivity estimated from glucose and insulin levels during an OGTT was significantly improved compared with fasting values in pregnant women with normal glucose tolerance and GDM. This study examined the use of fasting- and OGTT-derived indices to measure insulin sensitivity and secretion in pregnant women in southern Louisiana with varying degrees of glucose tolerance. We further explored the potential use of these measures to define racially diverse risk profiles for these pregnant women and compare them with obstetric and perinatal outcomes [3]. The Institutional Review Board of the Woman's Hospital Foundation approved the protocol, and all participants gave written informed consent.

Me h d

The HOMA-IR generally provides a partial estimate of body insulin sensitivity because it mainly correlates with basal hepatic insulin resistance. This is why we also evaluated dynamic insulin sensitivity using the OGTT insulin sensitivity model of Matsuda and De Fronzo, which correlates with total glucose disposal, as extensively validated vs. the glucose clamp in various pathophysiological conditions. In pregnant women, ISOGTT exhibits better correlation with insulin sensitivity, derived using the glucose clamp, than did the HOMA-IR model. Insulin secretion was estimated after oral glucose loading by two methods; the corrected insulin response at glucose peak and the insulinogenic index divided by HOMA-IR which have been applied previously in pregnant women with and without GDM. The insulinogenic index was calculated as the ratio of change in insulin concentration to change in glucose during the first 30 min of the OGTT. The early-phase insulin release calculated by the IGI is used as a surrogate marker of first-phase insulin secretion measured during the glucose clamp. β-Cell compensatory capacity was calculated using the insulin sensitivity-secretion index defined as the product of SIOGTT and first-phase insulin release index [4]. The IS-SI expresses the overall ability of the β-cell to increase its release rate relative to insulin resistance in response to a glucose stimulus and reveals the progressive loss of β-cell function in individuals with IGT and GDM that was originally demonstrated using the disposition index calculated from the glucose clamp. An analogous mathematically derived measure; the insulin sensitivity secretion index

has been utilized previously in both pregnant diabetic and non-diabetic women.

Obstetrical outcome information was obtained from a database that tracks labor and delivery data for all deliveries at the Woman's Hospital. Each woman's demographic information such as age and race was obtained from the computerized hospitalization record and confirmed with self-reported information. Neonatal data were abstracted by the review of maternal and new-born medical records. We recorded maternal pre pregnancy weight, parity, age, race, maternal drug or tobacco use, delivery mode, and obstetric history and infant's weight and height, gestational age at delivery, and birth weight for gestational age. According to the gestational age-specific weight distribution of the study population, infants were considered large-for-gestational age if their sex-specific birth weight for gestational age exceeded the 90th percentile of the US population fatal growth curvesag

Citation: