Hyperglycemia in GDM is related to fetal macrosomia, as are obesity and excessive maternal weight gain during pregnancy. The relevance of GV in birth weight is not clear.

The goal of this study is to determine the relationship between GV and birth weight in pregnant women diagnosed of GDM.

This prospective study included pregnant women with GDM, according to the NDDG criteria, followed in the same hospital between January 2012 and June 2015.

Patients were asked to test blood glucose four times a day (fasting and 1 hour postprandial) and data were directly downloaded from Accu-Check® Aviva (Roche) glucometers. Main exclusion criteria were twin pregnancy and previous diagnosis of type 1 or type 2 diabetes.

To analyze GV we considered the standard deviation (SD), the coefficient of variation (CV) and interquartile range (IQR). Birth weight and pregnancy and perinatal outcomes were studied.

N = 310 pregnant women with GDM
Mean age was 34.1 ± 4.6 y
Pre-pregnancy BMI was 26.8 ± 5.6 kg/m²

GDM diagnosed at 26.9 ± 6 weeks of gestation
Mean follow up: 57.5 ± 41 days
An average of 170.5 blood glucose measurements per patient were obtained

Cesarean section rate: 17.4%
Mean birth weight: 3,222 ± 461 g
Median customized weight percentile: 51.6 ± 28.2
10.3% large for gestational age

SD, CV and IQR had a negative correlation with birth weight in the group treated with insulin (54.8% of the women), showing no relationship in the group treated only with diet.

When controlling for pre-pregnancy BMI and weight gain during pregnancy, the correlation remained.

Glycemic variability in insulin-treated GDM appears to be related to less birth weight