

# Editorial

## *Making the Case for Euglycemia in Women With Gestational Diabetes Mellitus*

The diagnosis and management of gestational diabetes mellitus (GDM) remains controversial. In her clear review in this issue of *Canadian Journal of Diabetes*, Jovanovic reminds us that, in pregnant women, fasting blood glucose (FBG) levels are lower than in the non-pregnant state (3.05 to 3.61 mmol/L) and postprandial blood glucose (BG) levels rarely rise above 6.67 mmol/L (1). She reviews evidence that BG elevations above normal can be associated with enlarged fetal abdominal circumference and fetal macrosomia (2,3). The presence of fetal macrosomia tends to increase the cesarean section rate in pregnant women with GDM and can be associated with neonatal hypoglycemia, thereby leading to a higher incidence of infants requiring neonatal intensive care. Jovanovic raises the issue that these consequences lead to increased costs, and that treatment leads to decreased costs, as shown in the United States and echoed in an Italian study (4,5). We await Canadian data to clarify these findings with respect to our healthcare system.

A chapter in the recently published *Diabetes in Ontario. An ICES Practice Atlas* suggests that, in Ontario, the risks of hypertension, cesarean section and even stillbirth in women diagnosed with diabetes in pregnancy are almost double those in women without diabetes in pregnancy (6). Numerous studies suggest that BG values even within the normal range in women with GDM play a role in maternal morbidity, particularly in relation to increased abdominal circumference, macrosomia and immediate obstetric risks, such as cesarean section (2,3,7-9). A question yet to be resolved is this: Which outcomes are truly important to individuals and society, immediate or long term? Some clinicians feel that avoiding macrosomia, using the surrogate marker of ultrasound abdominal circumference as the important variable, may be adequate (7,10). What effect might this have on the long-term outcome of offspring with regard to their potential for childhood obesity, glucose intolerance and insulin resistance (11)?

How difficult is the treatment? Side effects are uncommon, as there is significant insulin resistance in women with GDM, and severe hypoglycemia is rare to nonexistent (12). The difficulties associated with treatment are primarily logistical, i.e. access to nutrition education, monitoring, insulin treatment, if needed, as well as any necessary additional fetal monitoring. Concern about psychological effects remains an issue, with arguments both 'pro' and 'con' associated with identification and labelling.

Currently, no definitive study has clearly identified the BG values that must be attained to affect outcome. The

Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Study—a 5-year, investigator-initiated, prospective, observational study involving 25 000 women from 10 countries—has been undertaken to obtain clear outcome data (13). All participants will undergo a 75-g 2-hour oral glucose tolerance test between 24 and 32 weeks' gestation, which will only be unblinded when FBG values are >5.8 mmol/L, 2-h postprandial BG values are >11.1 mmol/L, or a random BG at 34 to 37 weeks' gestation is ≥8.9 mmol/L.

Thus, until a definitive trial clarifies this issue, the argument suggested by Jovanovic—i.e. aiming for euglycemia whenever possible—appears to be the logical way to manage pregnant women with GDM.

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