

## **BC Women's booking ultrasound Guidelines: Diabetes**

### **Explanatory Notes:**

#### **Why are booking Guidelines needed?**

The main ultrasound department at BC Women Hospital performs approximately 18,000 examinations per year and receives referrals from all BC health authorities and the Yukon. Guidelines for booking of ultrasound in our facility are required due to high demands and limited capacity.

#### **How are requests prioritized?**

With respect to diabetes, priority is given to examinations that include specialized components such as "extended screening heart views" which are not readily available outside of MFM sites. Requests for serial or 3<sup>rd</sup> trimester growth assessments may be respectfully declined based on availability.

#### **Why are booking guidelines for Gestational Diabetes not aligned with the 2016 SOGC recommendations?**

The Society of Obstetricians and Gynecologists of Canada issued a clinical practice guideline on diabetes in pregnancy in 2016<sup>1</sup>. Ultrasound surveillance was recommended as follows:

5. For patients with pre-gestational diabetes mellitus or gestational diabetes mellitus, baseline sonographic assessment of fetal growth and amniotic fluid volume is recommended starting at 28 weeks gestation, with subsequent serial assessment of fetal growth and amniotic fluid volume, every 2 to 4 weeks, to assess the effect of maternal glycemic control on fetal growth rate and amniotic fluid volume. (II-2B)

Patients with gestational diabetes mellitus (GDM) delivering at BC Women's hospital benefit from an multidisciplinary Diabetes team. Decisions regarding management of GDM with diet and lifestyle modification alone or with the addition of insulin are generally made based on maternal glycemic control. Serial ultrasound to assess fetal growth is not currently part of routine practice nor is it routinely used to inform target glycemic targets. Requests for ultrasound are largely based on the clinical assessment of the primary obstetrical provider. In an otherwise low risk pregnancy, those with insulin-treated GDM typically have a routine third trimester ultrasound surveillance for growth, while those with diet-controlled GDM have ultrasound growth assessment only as needed as per clinical risk markers or characteristics.

Adherence to the SOGC's ultrasound recommendation for those with both insulin and diet-controlled GDM would lead to a significant increase in the number of examinations performed in the third trimester, and associated costs and resources. Over the past 4 years, an average of 917 patients delivering at BC Women's Hospital have a pregnancy complicated by GDM. We

sought to review the literature and local outcomes of pregnancies complicated by gestational diabetes to evaluate the need for a change in current practice.

**Key points supporting BCW Ultrasound booking algorithm for *Gestational Diabetes Mellitus* are summarized here:**

1. A 2019 Cochrane review found insufficient evidence to support the use of third trimester fetal biometry in addition maternal blood glucose monitoring to reduce the risk for adverse perinatal outcomes in women with gestational diabetes.<sup>2</sup>
2. The 2018 Diabetes Canada clinical practice guidelines found there lacked sufficient evidence to make a specific recommendation for the use of third trimester biometry for adjustment of glycemic targets to reduce rates of large or small for gestational age newborns.<sup>3</sup>
3. Among all deliveries at BC Women's Hospital in 2015 to 2018, the rates of Birth weight >4000g or >4500g are not increased in patients with GDM (diet or insulin treated) compared to those of newborns of non-diabetic women matched for age and parity. Therefore, increasing the frequency of third trimester ultrasound is unlikely to decrease rate of birth weight >4000g or 4500g in patients with GDM.

**GDM diet-controlled compared to control (2649 women in each group):**

outcomes	Diet-controlled GDM	Matched controls without diabetes	OR (95%CI)
BW>4000g	6.3%	10%	0.61(0.50-0.75)
BW>4500g	0.7%	1.1%	0.64(0.35-1.16)

**GDM insulin treated compared to matched control (1017 women in each group)**

outcomes	Insulin-treated	Matched controls with no diabetes	OR (95%CI)
BW>4000g	6.4%	11.1%	0.55 (0.40-0.75)
BW>4500g	0.7%	1.1%	0.63 (0.25-1.64)

**References:**

1. Berger H, Gagnon R, Semer M and the Maternal Fetal Committee: *Diabetes in Pregnancy*. J Obstet Gynaecol Can 2016; 38(7):667-679
2. RaoU, deVries B, RossGP, Gordon A: *Fetal biometry for guiding the medical management of women with gestational diabetes mellitus for improving maternal and perinatal health*. CochraneDatabaseofSystematicReviews 2019, Issue 9
3. Feig DS, Berger H, Donovan L, Godbout A, Kader T, Keely E, Sanghera R; *Clinical Practice Guidelines: Diabetes and Pregnancy*; Can J Diabetes 2018(42): S255-282,
4. Unpublished data from BCW PMR