

before 20 weeks of gestation has become the focus of considerable attention (280). For example, the NIH has funded a study, termed “Go Moms”, to address this issue. Several other studies are also underway to explore screening, diagnosis, and treatment of GDM before 20 weeks gestation.

There is evidence that women diagnosed with GDM early in pregnancy are more likely to have adverse outcomes. For example, outcomes for women with GDM diagnosed before 12 weeks of gestation are similar to those in women with pre-existing diabetes (281). However, there is no consensus on the glucose cutoff that should be used for diagnosis. The glycemic thresholds for the diagnosis of GDM in the second and third trimester may not be appropriate for early pregnancy because FPG normally declines in early pregnancy (282, 283). For example, in a large Chinese cohort many women with FPG in the first trimester above the IADPSG threshold for GDM did not have GDM when tested later in gestation (279).

Efforts to detect GDM earlier than 24 weeks gestation by methods other than glucose have been reported (284). For example, the Hb A_{1c} concentration at the first prenatal visit identifies risk of adverse pregnancy outcomes and diabetes during pregnancy, but is less effective for ascertainment of GDM (285, 286). Other studies suggest that biomarkers such as CD59 (287) or serum secreted frizzled-related protein-5 (288) may be useful in early identification of women in whom GDM will be identified later in pregnancy. There is an ongoing search to identify the optimum method to detect GDM in early pregnancy.

Towards a consensus on detection and diagnosis. Based on analysis of OGTT results from the Danish Odense Cohort Study (289, 290), McIntyre et al. (289) have questioned the universal use of the value ≥ 92 mg/dL (5.1 mmol/L) as the FPG threshold for a diagnosis of GDM by the IADPSG (258) and WHO (259) criteria for GDM. In an attempt to reduce the need to perform a full OGTT in all cases, some efforts have focused on an initial measurement of FPG under circumstances where an accurate measurement can be obtained quickly and high and low thresholds employed to eliminate the need for an OGTT (291, 292).

The International Federation of Gynecology and Obstetrics (FIGO) is strongly supporting an effort to reach a global consensus on an optimal strategy for the detection and diagnosis of GDM (293). This approach also includes recommendations for low-resource settings that are pragmatic, but not proven by prospective studies. In some circumstances, a glucose load is administered without formal fasting and only a single plasma glucose is measured 2 h later. In circumstances of very limited resources or in remote locations far from

laboratories, the only way of estimating glycemia is by point-of-care finger stick.

The controversy surrounding the optimal way to diagnose GDM continues, despite calls for global agreement on a common approach. In 2021 a group of obstetricians reviewed the strengths and weaknesses of the 1-step and 2-step approaches to diagnose GDM (294). The authors favored the 1-step procedure, but concluded that diagnostic thresholds should be confirmed by a large multi-institutional RCT. However, there is no assurance that such a RCT would end the GDM controversy. Definitive prospective clinical trials are needed to unequivocally establish a universal and pragmatic strategy to diagnose and follow-up GDM.

Urine Glucose

Recommendation: Urine glucose testing is not recommended for routine care of patients with diabetes mellitus. B (low)

DESCRIPTION/INTRODUCTION/TERMINOLOGY

Testing urine for glucose is inexpensive, noninvasive, and rapid. Analysis can be performed with paper test strips at home, in healthcare providers' offices or in clinics.

USE/RATIONALE

Measurement of glucose in the urine, once the hallmark of diabetes care in the home setting, has now been replaced by blood or interstitial glucose monitoring (see above). Semiquantitative urine glucose monitoring does not accurately reflect plasma glucose concentration (295). Notwithstanding these limitations, urine glucose monitoring is supported by the IDF in situations where blood glucose monitoring is not accessible or affordable, particularly in resource-poor settings (296). In addition, due to its high specificity, urine glucose is advocated by the IDF as a screening test for undiagnosed diabetes in low-resource settings where other procedures are not available (297).

Although urine glucose is detectable in individuals with grossly increased blood glucose concentrations, it provides no information about blood glucose concentrations below the variable renal glucose threshold [approximately 10 mmol/L (180 mg/dL)]. This alone limits its usefulness for monitoring diabetes under modern care recommendations. Semiquantitative urine glucose tests also cannot distinguish between euglycemia and hypoglycemia. Furthermore, the extent of renal concentration of the urine will affect urine glucose concentrations and only average glucose values between voidings are reflected, further minimizing the value of urine glucose determinations.