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LETTER TO THE EDITOR

New strategy for diagnosing abnormal glucose tolerance before 24 gestational weeks during the coronavirus disease 2019 pandemic

Currently, the spread of the coronavirus disease 2019 (COVID-19) is on the rise, and cases have been increasing worldwide. The societies associated with gestational diabetes (GDM) in several countries have recommended new strategies to diagnose abnormal glucose tolerance (AGT; i.e., overt diabetes and GDM) after 24 gestational weeks (late GDM) during the evolving COVID-19 pandemic[1]. As early GDM has been screened and diagnosed for more than 20 years in Japan, and perinatal outcomes might be worse than those of late GDM[2]. The Japanese Society of Diabetes and Pregnancy (JSDP) published the Japanese early AGT diagnostic strategy in the evolving COVID-19 pandemic on 10 April 2020[3]. Although we evaluated the Japanese strategy to diagnose late GDM[4], we have not validated the Japanese early GDM diagnostic strategy in the evolving COVID-19 pandemic. The aim of the present study was to evaluate the JSDP criteria to diagnose early AGT.

We retrospectively investigated the records of a cohort of 304 women diagnosed with GDM before 24 gestational weeks using the Japan Society of Obstetrics and Gynecology criteria, who received perinatal care at Keio University Hospital, Tokyo, Japan, between January 2013 and December 2019. Those screening positive for GDM in the first trimester at our hospital were defined if one or more values reached or exceeded the following thresholds: random plasma glucose level≥95 mg/dL (5.3 mmol/L), glycated hemoglobin ≥5.9% (40 mmol/mol),

glycoalbumin ≥15.8%, women with a history of GDM or macrosomia delivery, family history of type 2 diabetes or pre-pregnancy body mass index ≥25 kg/m². When the patients are positive for early GDM screening, they have to undergo an oral glucose tolerance test to diagnose GDM immediately. We re-classified them using the Japanese early AGT diagnostic strategy in the evolving COVID-19 pandemic published by the JSDP (Figure 1). We defined the patients who re-classified as overt diabetes (COVID-19-ovDM) and early GDM (COVID-19-EGDM) as COVID-19-EAGT. Odds ratios (ORs) and their 95% confidence intervals (CIs) for the association between COVID-19-EAGT and frequencies of insulin requirement, cesarean section or large for gestational age were evaluated using logistic regression analysis adjusted for maternal age ≥40 years, nulliparity and pregravid body mass index ≥25 kg/m².

Of the 304 patients, they were re-classified as COVID-19-ovDM ($n = 3$, 1%), COVID-19-EGDM ($n = 38$, 13%) and non-early AGT (COVID-19-non-EAGT; $n = 263$, 86%). According to the adjusted logistic regression analysis, the incidence of insulin requirement in the COVID-19-EAGT group was significantly higher than that in the COVID-19-non-EAGT group (OR 2.28, 95% CI 1.10–4.73, $P < 0.05$). However, the incidence of cesarean section (OR 1.54, 95% CI 0.76–3.14, $P = 0.23$) and large for gestational age (OR 1.74, 95% CI 0.46–6.61, $P = 0.41$) was equal between the two groups.

Although just 14% of participants were diagnosed with COVID-19-EAGT using

the new JSDP criteria, they might also detect more severe GDM patients who required insulin treatment during pregnancy; however, as GDM is one of the most important perinatal complications not only for mothers, but also for neonates, the diagnostic criteria might have to be re-considered to improve the diagnosis rate.

DISCLOSURE

The authors declare no conflict of interest.

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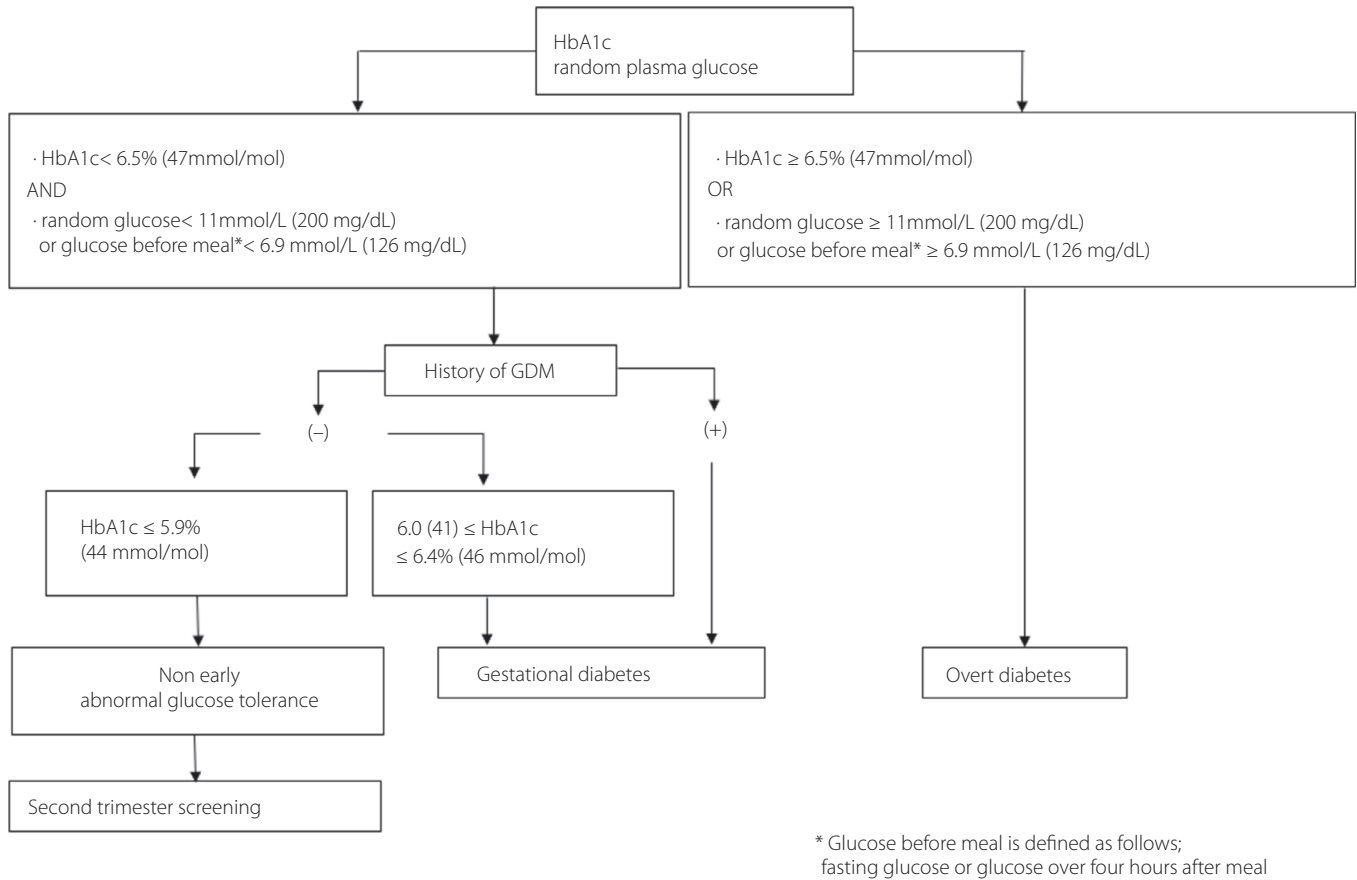
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Figure 1 | The Japanese abnormal glucose tolerance before 24 gestational weeks diagnostic strategy in the evolving coronavirus disease 2019 pandemic published by the Japanese Society of Diabetes and Pregnancy. *Glucose before meal is defined as fasting glucose or glucose >4 h after a meal. GDM, gestational diabetes; HbA1c, glycated hemoglobin.

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