



Does HbA_{1c} Have a Potential in Gestational Diabetes Mellitus Diagnosis?

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Dear Editor,

Gestational diabetes mellitus (GDM) is considered to presence of hyperglycemia for the first time during pregnancy which can affect up to 5% of pregnancies (1). Pregnant women with GDM are likely to develop type 2 diabetes 6 - 7 times more than healthy pregnant women (2). Also, GDM causes complications such as macrocosmic neonate, preeclampsia, the need for cesarean section delivery, shoulder dystocia and even the death of neonate (3).

Risk factors that contribute to GDM include maternal overweight, obesity, age older than 35 years, family history of diabetes, macrocosmic neonate, history of GDM in previous pregnancies, and non-Caucasian ethnicity (1, 3). Based on WHO criteria, GDM is usually diagnosed at 24 to 28 weeks of pregnancy (4). Early diagnosis of GDM is important not only in the treatment of GDM and prevention of postpartum type 2 diabetes, but also can lead to decrease other mentioned complications (2). Therefore, it is necessary to provide precise index for the diagnosis of GDM, which impose the less onerous on the pregnant mother (5).

Many studies have confirmed that the glycated hemoglobin (HbA_{1c}) value is an accurate index for diagnosis of diabetes that does not require fasting (2, 5, 6). Measurement of HbA_{1c} is easy and only needs to be measured once (7). Wu et al. (8) reported that HbA_{1c} combined with Hematocrit are useful criteria for early diagnosis of GDM. Inconsistent with this finding another study was shown that measurement of HbA_{1c} in first-trimester did not have sensitivity and specificity to diagnose GDM (9). The results of a meta-analysis were showed that HbA_{1c} is not a sensitive index for GDM diagnosis even in women with prior GDM (10). Many studies have shown that HbA_{1c} cannot be an appropriate alternative to other GDM diagnostic tests and has provided contradictory results (1,

11, 12). In fact HbA_{1c} is the mean of plasma glucose value in around the last 3 - 4 months and believed to be not a good indicator of GDM diagnosis due to the high amount of time required for changing HbA_{1c} and high turnover in red blood cells during pregnancy (11). A result from a cohort study was showed that since glycation of Hb requires several month, this index is not recommended for GDM diagnosis (13). On the other hand, some studies were reported that ethnic and racial differences can effect on glycation of Hb and therefore lead to HbA_{1c} variation (12, 14).

Overall, HbA_{1c} alone or combined with other GDM diagnostic tests which can detect GDM during each trimester are unclear. Therefore, further studies are required for determine precise of HbA_{1c} in GDM diagnose during pregnancy in every trimester and ethnic groups.

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