

Fetal Abdominal Obesity Detected At 24 to 28 Weeks of Gestation Persists Until Delivery Despite Management of Gestational Diabetes Mellitus (*Diabetes Metab J* 2021;45:547-57)

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The global incidence of gestational diabetes mellitus (GDM) is increasing steadily [1]. In addition to adverse maternal outcomes, GDM has been related to adverse fetal outcomes, such as a large for gestational age (LGA) newborn or macrosomia [2,3]. Offspring born to mothers with GDM have a higher likelihood of developing obesity, having impaired glucose tolerance, and developing type 2 diabetes mellitus in childhood or in early adulthood [4]. Management of GDM was reported to reduce the frequency of LGA and macrosomia, but fetal adiposity was not normalized [5,6].

In this article titled, “Fetal abdominal obesity detected at 24 to 28 weeks of gestation persists until delivery despite management of gestational diabetes mellitus,” Kim et al. [7] investigated whether management of GDM improves fetal abdominal obesity (FAO) in GDM subjects near term. Fetal abdominal overgrowth ratio and odds ratio for FAO were significantly higher in older and/or obese women with GDM but not in young and nonobese women with GDM compared with normal glucose tolerance (NGT) subjects near term. For fetuses of GDM subjects with FAO at the time of GDM diagnosis, the odds ratio for FAO near term and LGA at birth were 7.87 (95% confidence interval [CI], 4.38 to 14.15) and 10.96 (95% CI, 5.58 to 20.53), respectively, compared with fetuses of NGT subjects without FAO at GDM diagnosis. In conclusion, FAO detected at the time of GDM diagnosis persisted until delivery despite

treatment. Consequently, early diagnosis and treatment might be necessary to prevent near term FAO in high-risk older and/or obese women. However, there are several issues to be discussed.

First, the result of this study was consistent with those of previous studies that fetal adiposity was not normalized by treatment of GDM. In addition, since FAO was diagnosed at 24 to 28 weeks of gestation, it is not clear whether diagnosis and treatment of FAO before 24 weeks of gestation would be helpful. Actually, there were no specific treatments of FAO during pregnancy. However, to reduce various risks associated with FAO, lifestyle modification including diet control and regular exercise is needed in women with FAO, especially in those with GDM.

Second, this study showed that FAO detected at 24 to 28 weeks of gestation persists until near term only in older GDM patients (≥ 35 years). This is expected because advanced maternal age is associated with various disorders, including GDM and LGA newborn. Considering the rapid increase in maternal age at delivery in Korea, management of FAO is important. Although we do not know why FAO at the time of GDM diagnosis in young patients was not associated with near-term FAO, careful management of FAO should be recommended to reduce the risk of adverse maternal and fetal outcomes, even in young GDM patients.

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Finally, a limitation of this study is that various factors affecting fetal growth were not evaluated. Although few studies have evaluated the associations between FAO and various factors, many have investigated risk factors for LGA newborns. The most representative factor is maternal serum lipid measure, such as triglycerides or free fatty acid (FFA). The maternal fasting serum triglycerides level at mid-pregnancy can predict LGA independent of maternal pre-pregnancy body mass index, weight gain during pregnancy, age, and parity in women with GDM [8]. In addition, a high 2 hour-FFA level (but not fasting FFA) at mid-pregnancy is associated with increased risk of LGA newborn in women with GDM [3]. In addition to maternal serum lipids, other known risk factors for delivering LGA newborns include multiparity, gestational weight gain, smoking, and insulin resistance [9,10]. Special attention is needed to prevent near-term FAO and LGA newborns in women who have the aforementioned risk factors as well as in older and/or obese women.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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