COMMENT ON KOIVUSALO ET AL.

Gestational Diabetes Mellitus Can Be Prevented by Lifestyle Intervention: The Finnish Gestational Diabetes Prevention Study (RADIEL): A Randomized Controlled Trial. Diabetes Care 2016;39:24–30

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I read with great interest the recent article in *Diabetes Care* by Koivusalo et al. (1). In a randomized controlled trial, namely the Finnish Gestational Diabetes Prevention Study (RADIEL), Koivusalo et al. report that lifestyle intervention reduced the incidence of gestational diabetes mellitus (GDM) by 39% in pregnant women with a history of GDM and/or prepregnancy obesity (1). The authors highlighted that this significant reduction in GDM incidence was achieved through a moderate lifestyle intervention including only three visits to the study nurse and one group visit to the dietitian during pregnancy, which was much less intensive than previous trials for the prevention of type 2 diabetes among individuals with impaired glucose tolerance such as the U.S. Diabetes Prevention Program (DPP) (2). The RADIEL trial (1) underscored the importance of adopting a healthy lifestyle in ensuring a healthy pregnancy.

In contrast, previous randomized controlled trials of metformin during pregnancy did not show a significant reduction in the incidence of GDM (3,4). In the Metformin in Obese Nondiabetic Pregnant Women (MOP) trial, metformin (3.0 g/day) administration from 12 to 18 weeks of gestation until delivery did not reduce risk of GDM; the incidence of GDM was 12.4% in the intervention group vs. 11.3% in the control group (3). In the Efficacy of Metformin in Pregnant Obese Women (EMPOWaR) trial among obese pregnant women, the intervention group that received metformin (500–2,500 mg/day) from 12 to 16 weeks of gestation until delivery had a lower rate of developing GDM than the control group (18% vs. 24%), but the reduction was not statistically significant (4). Although many factors could explain the divergent findings in the lifestyle (1) versus metformin (3,4) intervention trials, these findings might indicate a more profound reduction in GDM through lifestyle intervention than metformin. Although this postulation is certainly warranted for confirmation in more studies, including those with comparative effectiveness design, similar results (i.e., stronger reduction in diabetes risk through lifestyle intervention than metformin) were observed in the DPP trial (2).

It is noteworthy that the results reported by Koivusalo et al. (1) were from pregnant women among whom the lifestyle intervention was initiated in the first or second trimester of pregnancy. It is possible that lifestyle intervention with a longer duration (e.g., if initiated before pregnancy) would have a greater effect. A large prospective cohort study has shown that adherence to a healthy, low-risk lifestyle (i.e., maintaining a healthy body weight, consuming a healthy diet, exercising regularly, and not smoking) before pregnancy was associated with a substantially lower risk of GDM (5). Specifically, women at low risk for all the four lifestyle factors had more than 80% lower risk than those without any of the low-risk factors (5). Fortunately, in addition to the enrollment of pregnant women (1), the original RADIEL trial also recruited women before pregnancy for lifestyle intervention and follow-up. With the growing epidemic of obesity and GDM among women of reproductive age, findings from this trial regarding the effects of prepregnancy lifestyle intervention on reducing GDM incidence will be of great interest and importance from both clinical and public health perspectives.

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