A diet with a low glycemic index has no effect on the incidence of macrosomia in an at-risk group, but a positive effect on maternal outcomes.

A strong association has been noted between excessive weight gain during pregnancy and increased birth weight. Furthermore, fetal macrosomia recurs in 30% to 50% of second pregnancies. It has been asserted that a diet rich in high glycemic index foods can result in fetoplacental overgrowth and excessive maternal weight gain, predisposing the fetus to macrosomia. Researchers therefore developed the first randomized controlled trial to determine what effect a low glycemic index diet has on fetal growth and maternal weight gain.

A total of 800 women without diabetes in their second pregnancy of less than 18 weeks’ gestation who previously delivered a child whose birth weight exceeded 4 kg (8 lb 13 oz) were randomized to either an intervention group or a control group. Women in the intervention group received dietary counseling on 3 separate occasions throughout their pregnancy and were advised to eat healthfully, choose as many low glycemic index foods as possible, and avoid high glycemic index foods when possible. The first dietary counseling session occurred at a mean gestational age of 15.7 weeks. Women in the control group received routine antenatal care, which did not involve formal dietary recommendations or specific advice about gestational weight gain.

Between the intervention and control groups, no significant differences in absolute birth weight, birth weight percentile, or ponderal index were found. Fetal macrosomia recurred in 189 cases (51%) in the intervention group and 199 cases (51%) in the control group. However, women in the intervention group gained significantly less weight during their pregnancy than women in the control group (12.2 kg vs 13.7 kg, respectively; P = 0.01). In addition, fewer women in the intervention group than in the control group had impaired glucose tolerance (21% vs 28%, respectively). Cord blood glucose levels were similar between the study groups, and there was no difference between groups in the incidence of gestational diabetes.

“The use of a low glycemic index diet in pregnancy is a simple, safe, and effective measure to improve maternal glucose homeostasis and to reduce gestational weight gain,” conclude the study authors. These results are similar to another study that showed that a low glycemic index diet had little effect on birth weight but a positive effect on maternal outcomes in overweight women.

Pertinent Points:
- A low glycemic index diet in pregnancy did not reduce the number of large for gestational age infants in a group at risk for fetal macrosomia.
- Gestational weight gain and the incidence of impaired glucose tolerance were significantly less for pregnant women on a low glycemic index diet.

References:

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