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Folic acid supplementation before and in early pregnancy and risk of gestational diabetes mellitus: Evidence from a prospective cohort study

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We aimed to assess the effect of folic acid (FA) supplementation on the risk of gestational diabetes mellitus (GDM). 4122 pregnant women with detailed information on FA use and results of oral glucose tolerance tests (OGTT) from Tongji Maternal and Child Health Cohort (TMCHC), a prospective cohort in Wuhan, China were involved for analyses. Risks of GDM were evaluated by FA supplementation status using logistic regression and comparisons of glucose levels among different FA use groups were conducted using linear regression. 8.4% were diagnosed with GDM. Compared with no FA users, the adjusted odds ratio (aOR) and 95% CI was 1.97 (1.27, 3.06) for those with ≥800 μg/day FA supplementation since pre-pregnancy to early pregnancy. The adverse effect was consistent regardless of age, weight gain at 24 weeks and family history of diabetes, whereas was only in male but not female fetus. AORs and 95% CIs for age <29 years, ≥29 years were 1.96 (1.01, 3.80); 1.94 (1.06, 3.57); weight gain at 24 weeks <8 kg, ≥8 kg were 1.85 (1.02, 3.36); 1.98 (1.02, 3.86); without or with family history of diabetes were 1.68 (1.05, 2.68); 5.77 (1.22, 27.38), respectively. In male fetus, FA supplementation ≥800 μg/day increased risk of GDM with aOR and 95% CI 2.16 (1.18, 3.94). Significant interaction was discovered between FA use and fetal sex. We also found FA supplementation ≥800 μg/day from pre-pregnancy to early pregnancy elevated 1h postload blood glucose (PBG), 2-h PBG by 0.34 mmol/L, 0.21 mmol/L respectively.

Biography

Qian Li is a PhD from Huazhong University of Science and Technology and majors in nutrition and food hygiene, Hubei key laboratory of food nutrition and safety, China. She has clinical experience in providing nutritional suggestions for pregnant women.(Up to 100 words)

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