Prepregnancy dietary patterns and risk of developing hypertensive disorders of pregnancy: results from the Australian Longitudinal Study on Women’s Health

Danielle AJM Schoenaker, Sabita S Soedamah-Muthu, Leonie K Callaway, and Gita D Mishra

Abstract

Background: Hypertensive disorders of pregnancy (HDPs), including gestational hypertension and pre-eclampsia, are common obstetric complications associated with adverse health outcomes for the mother and child. It remains unclear how dietary intake can influence HDP risk.

Objective: We investigated associations between prepregnancy dietary patterns and risk of HDPs.

Design: We selected 3582 women participating in the Australian Longitudinal Study on Women’s Health, which is an observational population-based study. Women were not pregnant at baseline in 2003 and reported at least one live birth between 2003 and 2012. Diet was assessed by using a validated 101-item food-frequency questionnaire in 2003, and factor analysis was used to identify dietary patterns. HDP were assessed by using the question, “Were you diagnosed or treated for hypertension during pregnancy?” Generalized estimating equation models were used to estimate RRs (95% CIs) adjusted for dietary, reproductive, sociodemographic, and lifestyle factors.

Results: During 9 y of follow-up of 3582 women, 305 women (8.5%) reported a first diagnosis of HDPs in 6149 pregnancies. We identified 4 dietary patterns labeled as meat, high-fat, and sugar; Mediterranean-style; fruit and low-fat dairy; and cooked vegetables. In the adjusted model, the meat, high-fat, and sugar, fruit and low-fat dairy, and cooked vegetable dietary patterns were not associated with HDP risk. The Mediterranean-style dietary pattern (characterized by vegetables, legumes, nuts, tofu, rice, pasta, rye bread, red wine, and fish) was inversely associated with risk of developing HDPs (quartile 4 compared with quartile 1: RR, 0.58; 95% CI, 0.42, 0.81).

Conclusions: In this population-based study of Australian women, we observed an independent protective dose-response association between prepregnancy consumption of a Mediterranean-style dietary pattern and HDP risk. Additional studies are recommended to confirm our findings by prospectively examining whether the implementation of the Mediterranean-style dietary pattern before pregnancy has a role in the prevention of HDPs.

Keywords:
- dietary patterns
- hypertensive disorders of pregnancy
- nutrition
- pregnancy
- Mediterranean diet

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