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Gestational diabetes mellitus, pre-eclampsia and future cardiovascular disease: need to consider both BMI and gestational weight gain to investigate the link

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Gestational diabetes mellitus, pre-eclampsia and future cardiovascular disease: need to consider both BMI and gestational weight gain to investigate the link

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Hildén et al recently published in the journal (1) a nested case–control study investigating "if the preeclampsia association with the future risk of cardiovascular disease (CVD) was independent of gestational diabetes mellitus (GDM) and modified by body mass index (BMI) or GDM". From "2639 cases and 13 310 controls with "complete data" in the Swedish National Board of Health and Welfare for the years 1991–2008. Using the ICD $9^{th}/10^{th}$revisions, precise definitions for GDM and hypertensive disorders, a classification of body mass index (BMI) into underweight, normal weight, overweight and obese categories, and adjusting for potential confounding variables but not for gestational weight gain (GWG) , they concluded that the association between pre-eclampsia and future CVD "is not modified by body mass index (BMI)".

In actuality, stratifying by maternal BMI, they indeed found that "adjusted association of pre-eclampsia with CVD did not change substantially, among normal weight (OR 2.65, 95% CI 1.90–3.69), overweight (OR 2.67, 95% CI 1.52–4.68) and obese (OR 3.03, 95% CI 0.74–12.4) women", but without adjustment for GWG and with large confidence intervals of OR.

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However, GWG has emerged in recent years as an essential associated factor in the link between obesity and the risk of preeclampsia, in which compliance with dietary recommendations (with GWG neither excessive nor insufficient) emerged as a cornerstone of management (2). More specifically, from an observational cohort study of 15,551 women without pregravid diabetes or hypertension and including 2097 GDM (3), we found that in the GDM group of patients, GWG was a clue for dietary compliance. In addition, the prevalence of pre-eclampsia remained associated in a dose-response relationship with adherence to the Institute of Medicine GWG guidelines (4) in the obese group, after logistic regression analysis (3).

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