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Source

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Abstract

An accumulating body of evidence suggests that offspring of mothers with preeclampsia have higher blood pressure during childhood and young adulthood compared with women without preeclampsia. However, the evidence with regard to offspring glucose metabolism and lipids is more scant. We examined whether maternal hypertensive disorders of pregnancy (preeclampsia and gestational hypertension) are associated with a range of cardiometabolic health measures in adolescent offspring. We included data for mother-offspring pairs from a United Kingdom prospective birth cohort (the Avon Longitudinal Study of Parents and Children). Repeat antenatal clinic measures of blood pressure and proteinuria (median 14 and 11, respectively) were used to ascertain maternal preeclampsia (n=53) and gestational hypertension (n=431). Offspring had blood pressure (n=4438), and fasting lipids, insulin, and glucose (n=2888) measured at a mean age of 17 years. There was no strong evidence of differences in fasting insulin, glucose, or lipid concentrations. Systolic and diastolic blood pressures were higher in offspring of mothers with gestational hypertension (mean difference, 2.06 mm Hg; 95% confidence interval, 1.28-2.84 and 1.11 mm Hg; 95% confidence interval, 0.54-1.69, respectively) and preeclampsia (1.12 mm Hg; 95% confidence interval, -0.89-3.12 and 1.71 mm Hg; 95% confidence interval, 0.23-3.17, respectively) compared with offspring of mothers without hypertensive disorders of pregnancy, adjusting for potential confounders (age, sex, maternal age at delivery, household social class, prepregnancy body mass index, parity, and smoking in pregnancy). Results suggest a specific association between maternal hypertensive disorders of pregnancy and offspring blood pressure that may be driven by genetics or familial nongenetic risk factors particular to blood pressure.

KEYWORDS:

ALSPAC, hypertension, pregnancy-induced, preeclampsia

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