Introduction The risk of cardiovascular outcomes associated with gestational hypertension is unclear. This study aimed to quantify the association between gestational hypertension and cardiovascular outcomes for women.

Design Systematic review and meta-analysis.

Data Sources PubMed, Embase and Web of Science.

Eligibility Criteria Studies examining the association between gestational hypertension and any cardiovascular outcome, including cardiovascular disease, coronary heart disease, stroke and heart failure. Two reviewers independently assessed the abstracts and full-text articles. Study characteristics and the relative risk of cardiovascular outcomes associated with gestational hypertension were extracted from eligible studies. Where appropriate, estimates were pooled with inverse variance weighted random-effects meta-analysis, and the absolute risk increases were calculated using the European population as a reference, as the majority of studies came from Europe.

Results Nineteen studies involving 3,601,192 women (128,445 with gestational hypertension) were identified. A history of one or more pregnancies affected by gestational hypertension was associated with an increased risk of cardiovascular disease (12 studies, relative risk 1.73, 95% confidence interval: 1.43–2.08), coronary heart disease (8 studies, 1.56, 1.35–1.81) and heart failure (4 studies, 1.70, 1.43–2.02). (See Figure) There was also evidence for an increased risk of stroke (9 studies, 1.66, 0.99–2.80). Among the outcomes examined, the highest absolute risk increase was for cardiovascular disease: 14.0 events/1000 person-years. Associations between gestational hypertension and cardiovascular disease were broadly consistent across subgroups, although there was evidence that high quality studies with a low risk of bias had lower effect estimates. When analyses were restricted to high quality studies, an increased risk was found for all outcomes: cardiovascular disease, (1.53, 1.25–1.88); coronary heart disease, (1.40, 1.26–1.54); stroke, (1.35, 1.14–1.60); and heart failure, (1.70, 1.43–2.02).

Conclusion Gestational hypertension is associated with an increased risk of overall cardiovascular disease, coronary heart disease, stroke and heart failure. Only two studies evaluated risk associated with the number of pregnancies affected by gestational hypertension, therefore more research is needed to assess the presence of a dose-response relationship.

Conflict of Interest None