Preeclampsia associated with increased risk of heart defects in infants

October 20 2015

An analysis of more than 1.9 million mother and infant pairs finds that preeclampsia was significantly associated with noncritical heart defects in offspring, and preeclampsia with onset before 34 weeks was associated with critical heart defects; however, the absolute risk of congenital heart defects was low, according to a study in the October 20 issue of *JAMA*.

Congenital heart defects are the most common anomalies in infants, affecting every 8 births per 1,000, and are a major cause of infant illness and death, despite significant advancements in medical care. The causes and risk factors for congenital heart defects are mostly unknown. Some studies have shown that the pathology of preeclampsia (a disorder of pregnancy characterized by high blood pressure and excess protein in the urine) begins early and possibly even at the start of pregnancy, around the time of fetal heart morphogenesis. Despite the plausible link, evidence that preeclampsia is associated with congenital heart defects has largely been absent, according to background information in the article.

Nathalie Auger, M.D., M.Sc., F.R.C.P.C., of the University of Montreal, Quebec, Canada and colleagues conducted an analysis of live births before discharge (1989-2012) for the entire province of Quebec, comprising a quarter of Canada's population. All women who delivered an infant with or without heart defects in any Quebec hospital were included (n = 1,942,072 neonates). The researchers examined the presence of any critical or noncritical congenital heart defect detected in

infants at birth, comparing prevalence in those exposed and not exposed to preeclampsia. In general, critical heart defects lead to significant mortality and morbidity if not diagnosed promptly after birth; for noncritical defects, mortality and morbidity are much lower.

The overall prevalence of heart defects was 8.9 per 1,000 infants. Prevalence was higher for infants of women with preeclampsia than without preeclampsia (16.7 vs 8.6 per 1,000). Risk was elevated for defects affecting all general structures of the heart, including the aorta, pulmonary artery, valves, ventricles, and septa. Infants of women with preeclampsia had no increased prevalence of critical heart defects but did have an increased prevalence of noncritical heart defects compared with infants of non-preeclamptic women. Compared with infants of women with late-onset preeclampsia, those with early onset (