Maternal Prenatal Lead Exposure Linked with Early Childhood High Blood Pressure in Offspring

Exposure to lead during pregnancy was linked with higher blood pressure in young children in a study presented at Kidney Week 2015. Exposure to lead during infancy did not seem to impact later blood pressure.

Alison Sanders, PhD, of the Icahn School of Medicine at Mount Sinai and her colleagues examined the effect of exposure to lead during pregnancy or in infancy on blood pressure in 4-year-old children. The analysis included 397 children and their mothers, with maternal blood samples previously collected at the 2nd trimester, 3rd trimester, and at delivery. Children’s blood samples were collected at birth, 1 year, and 2 years of age.

The team found that exposure to lead during pregnancy was tied to higher blood pressure in the 4-year-olds, but the effects of lead exposure on blood pressure did not show up during infancy.

“There is growing awareness that adult hypertension has origins in childhood. These findings support the role of lead exposure in the developmental origins of disease, possibly even adult hypertension,” said Dr. Sanders. “If so, the prenatal period may be a susceptible window for the development of mechanisms that regulate blood pressure and may be an appropriate time-frame during which interventions to prevent hypertension should occur.”

“Effect of Prenatal and Childhood Lead Exposure on Blood Pressure at 4 Years of Age” (Abstract SA-PO644).

African Americans with Uncontrolled Hypertension Often Lack Healthy Foods

Many African Americans with uncontrolled hypertension do not have recommended food choices in their homes. They also often do not have adequate discussions with their doctors about diet, especially the Dietary Approaches to Stop Hypertension (DASH) diet, according to findings from two studies presented at ASN Kidney Week 2015.

The DASH diet is recommended for the treatment of hypertension, especially among African Americans. To assess barriers to following the DASH diet, Deidra Crews, MD, ScM, FASN, of Johns Hopkins University School of Medicine and her colleagues conducted interviews and inspected the homes of 159 African Americans with uncontrolled hypertension living in Baltimore, MD. They found that those with chronic kidney disease (CKD) were less likely to have fresh fruits than those with normal kidney function and that young African Americans were less likely to have plant proteins available. Those who were both young and with lower incomes were less likely to have whole grains in their homes.

Overall, only 14.5% of patients had all 5 of the DASH food categories in their homes (fruits, vegetables, low-fat dairy, whole grains, and plant proteins).

Beyond looking at food availability, Crews and her team also looked at the homes’ capacity for preparing adequate meals. While more than 80% had full-sized ovens and refrigerators to allow for DASH meal preparation, low health literacy was associated with a lower likelihood of having these appliances.

“The homes of urban African Americans with risk factors for chronic kidney disease were often lacking either the foods or needed appliances for preparing DASH diet–accordant meals,” said Dr. Crews. “Interventions to improve the dietary quality of this high-risk group should consider these factors.”

“Engaging Urban African Americans at Risk for CKD in Discussions about their Diet” (Abstract SA-PO715).