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SMOKING WHILE PREGNANT MAY COMPROMISE CHILDREN'S KIDNEY FUNCTION

The effects of smoking on kidney health were evident in 3-year-old children.

Highlights

- Compared with those born from nonsmoking mothers, young children whose mothers smoked while pregnant were 1.24-times more likely to show signs of kidney damage.

Washington, DC (December 22, 2016) — In a new study, young children showed signs of kidney damage if their mothers smoked while pregnant. The findings, which appear in an upcoming issue of the *Clinical Journal of the American Society of Nephrology* (CJASN), add to the list of negative health effects that can result from maternal smoking during pregnancy.

Because smoking is a well-known risk factor for kidney failure in adults, a team led by Koji Kawakami, MD, PhD, Maki Shinzawa, MD, PhD, and Motoko Yanagita MD, PhD (Kyoto University, in Japan) wondered whether maternal smoking during pregnancy might affect children's kidney health. The researchers conducted a population-based retrospective study using a database of health check-ups from pregnancy to 3 years of age in Japan. The investigators looked for the presence of proteinuria—or elevated protein in the urine, which is a sign of reduced kidney function—in urinary tests from 44,595 children.

In the population examined, 4.4% of women smoked only before pregnancy and 16.7% continued smoking while pregnant. The frequencies of proteinuria in the child at age 3 were 1.7% when mothers continued to smoke during pregnancy, 1.6% when mothers stopped smoking during pregnancy, and 1.3% when mothers were nonsmokers, respectively. Maternal smoking during pregnancy was associated with a 1.24-times increased risk of child proteinuria compared with no exposure to maternal smoking during pregnancy.

“Maternal smoking during pregnancy is known to be associated with preterm birth, low birth weight, and neonatal asphyxia. The findings from this study suggest an additional adverse effects of maternal smoking during pregnancy,” said Dr. Kawakami. “Prevention

of child proteinuria is important since child proteinuria can lead to development of chronic kidney disease in adulthood and ultimately end stage renal disease.”

Study co-authors include Shiro Tanaka, PhD, Hironobu Tokumasu, MD, MPH, Daisuke Takada MD, and Tatsuo Tsukamoto MD, PhD.

Disclosures: The authors reported no financial disclosures.

The article, entitled “Maternal Smoking During Pregnancy, Household Smoking After the Child's Birth, and Childhood Proteinuria at Age Three,” will appear online at <http://cjasn.asnjournals.org/> on December 22, 2016, doi: 10.2215/CJN. 05980616.

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