RESEARCHERS FIND NEW TIES BETWEEN KIDNEY STONE RISK, TREATMENT AND DIET, STATINS AND BODY FAT DISTRIBUTION

Washington, DC, May 17, 2011 – A series of studies that examine the relationship of diet, obesity, nutrition and statin medications will be presented to media at a special press conference during the 2011 Annual Meeting of the American Urological Association (AUA). The event will be held in the AUA Press Suite at the Walter E. Washington Convention Center on Tuesday, May 17, 2011 at 8 a.m. EDT and will be moderated by Dean G. Assimos, MD.

Total Caloric Intake Modulates Risk for Urinary Stones in Women: Results from The Women’s Health Initiative (#2139): While obesity is loosely tied to the risk of kidney stones, researchers in this study from the University of California, San Francisco attempted to discover the exact causal relationship. They found that modifying total daily caloric intake may be an important measure in the reduction of stone disease. The researchers used data from the Women’s Health Initiative Observational Study and identified 78,551 participants who were included based on data related to diet, body mass index (BMI) and occurrence of symptomatic stone disease. Even when adjusted for obesity, total caloric intake conferred an independent risk of stone disease, suggesting that regulating the total number of calories ingested daily may play a significant role in risk reduction for stone disease in obese and overweight people.

Diet, Vegetarianism and Urolithiasis (#2146): Researchers from the Cancer Epidemiology Unit, University of Oxford, Oxford, UK, found that meat-heavy diets may be associated with an increased risk of developing kidney stones and that a high intake of fresh fruit, fiber and certain minerals may reduce risk. The team studied 50,617 participants in the Oxford arm of the International Agency for Research on Cancer’s European Prospective Investigation into Cancer and Nutrition (EPIC) Project. 202 participants were diagnosed with kidney stones during the follow-up period. Regression analysis was used to examine the association of diet with risk after stratification by sex, method of recruitment and region of residence, and adjusting for smoking and drinking alcohol. Compared to those with a high meat diet, the incidence rate of stones was .71 for moderate meat eaters, .52 for low meat eaters and .52 for fish eaters and vegetarians. Diets with high intake of fresh fruit, and those high in fiber, magnesium, iron and potassium, were associated with a reduction in stone disease. There was no association found with vegetable consumption, calcium or vitamin C.

The Effect of Statin Medications On Urinary Stone Formation: A Ten Year Review of the Armed Forces Health Longitudinal Technology Application (AHLTA) Database (#2233): Attempting to clarify the exact cause of kidney stone formation, a team of researchers from the University of California, San Francisco investigated the relationship between hyperlipidemia (high cholesterol and triglycerides) and kidney stones, as well as the impact of statin medications (typically used to treat high cholesterol) on stone formation. Patient records from the AHLTA database were used; 57,320, (36,341 male) were identified with hyperlipidemia. 32,386 patients (20,063 male) were prescribed statin medications including 1,030 (724 male) who developed a stone. While confirming the relationship of urinary stone disease with hyperlipidemia, the researchers found that the use of statin medications was associated with a reduction in risk of stone disease; the effect was seen more prominently in females.

Do Antioxidants Lower The Risk Of Stone Disease? (#2239): Alpha-carotene, beta-carotene and betacryptoxanthin are known as antioxidants, nutrients found in legumes, nuts and grains that eliminate so-called free radicals, molecules that have been linked to certain diseases. In this study, authors from the University of Iowa in Iowa City found that higher levels of these antioxidants in the body may be associated with a lower risk of stone formation. Using data from adult participants in the National Health and Nutrition Examination
Survey (NHANES III) researchers compared serum levels of antioxidants between those with and without a history of kidney stones, adjusting for covariates of age, gender, BMI, race/ethnicity, hypertension and metabolic syndrome. Of the 17,695 survey participants, 5.25 percent reported a history of kidney stones. After adjusting for covariates, mean levels of antioxidants were significantly lower in those with kidney stones: -9.36 percent for alpha carotene; -10.79 percent for beta-carotene and -8.48 percent for beta-cryptoxanthin. Lycopene and other antioxidant levels did not correlate with history of stones.

**Obesogenic Profile of Contemporary North American Renal Stone Patients (#1825):** Body mass index (BMI) has limitations as a measure of obesity; and more importantly, as a method of accounting for fat distribution throughout the body. Researchers from the McMaster Institute of Urology in Hamilton, Ontario, studied fat distribution and metabolic hormonal make up in stone patients and found that gender differences in fat distribution may account for failure of shockwave lithotripsy (SWL). This prospective study included 113 patients (73 male, mean age of 54) undergoing treatment for renal stones between November 2009 and June 2010. Twenty-eight percent of patients had BMI within the normal range, while 32 percent were overweight. Males had a higher proportion of visceral adiposity (fat located around the abdomen) while females had a higher peripheral adiposity (fat located in the arms and thighs). This finding may impact the success of lithotripsy, as females have an increased skin-to-stone distance. In addition, levels of fat-related hormones adiponectin and leptin in stone patients may also tie risk of obesity-related metabolic disorders to higher complication rates when treating stones.

“There is robust evidence that diet has a significant impact on kidney stone formation. Consumption of a balanced, heart-healthy diet may reduce the risk of kidney stone formation,” said AUA spokesman Dean G. Assimos, MD. “The development of kidney stones is also associated with a number of systemic disorders, including obesity, hypertension, diabetes mellitus and coronary heart disease. Oxidative stress may play an underlying role in these associations.”

**NOTE TO REPORTERS:** Experts are available to discuss this study outside normal briefing times. To arrange an interview with an expert, please contact the AUA Communications Office at the number above or e-mail Communications@AUAnet.org.

**About the American Urological Association:** Founded in 1902 and headquartered near Baltimore, Maryland, the American Urological Association is the pre-eminent professional organization for urologists, with more than 17,000 members throughout the world. An educational nonprofit organization, the AUA pursues its mission of fostering the highest standards of urologic care by carrying out a wide variety of programs for members and their patients.

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