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Press Release

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REDUCED KIDNEY FUNCTION LINKED WITH HIGHER RISK OF KIDNEY AND UROTHELIAL CANCERS

Individuals with poor kidney function may require more intensive screening for these cancer types

Highlights

- Individuals' risk of kidney cancer increased with decreasing kidney function.
- Individuals with poor kidney function also had an increased risk of urothelial cancer
- Kidney function was not linked with risk for other cancers, including prostate, breast, lung, and colorectal cancers.

60 million people globally have chronic kidney disease.

Washington, DC (May 29, 2014) — Reduced kidney function may increase the risk of developing kidney and urothelial cancers, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN). The findings suggest that patients with kidney disease may benefit from more intensive screenings for these types of cancer.

Chronic kidney disease and cancer are both major and growing public health problems. "While multiple studies have observed higher risks of cancer in persons with end-stage renal disease, the association of less severe kidney disease with cancer remains poorly understood," said Alan Go, MD (Kaiser Permanente Northern California).

To investigate, Dr. Go and his colleagues analyzed information from nearly 1.2 million adult members of Kaiser Permanente in Northern California who were at least 40 years of age and who had no history of cancer, dialysis, or kidney transplantation. Kidney function was measured by estimated glomerular filtration rate (eGFR), with normal kidney function being over 60 ml/min/1.73m^2 and kidney failure being below 15 ml/min/1.73m^2.

During more than 6 million person-years of follow-up, 72,875 individuals developed cancer. (A person-year is the number of years of follow-up multiplied by the number of people in the study.) Among the major findings during follow-up:

- Individuals with an eGFR of 45 to 59 had a 39% increased risk of kidney cancer (or renal cell carcinoma).

- Individuals with an eGFR of 30 to 44 had an 81% increased risk of kidney cancer.
- Individuals with an eGFR below 30 had a 100% (or a 2-fold) increased risk of kidney cancer.
- Individuals with an eGFR below 30 had a 48% increased risk of urothelial cancer, which includes tumors in the bladder and ureters.
- There were no significant links between eGFR and other cancer types such as prostate, breast, lung, and colorectal cancers.

The researchers noted that various biologic mechanisms may help to explain the links observed in this study. For example, kidney dysfunction causes a state of chronic inflammation and oxidative stress. “These and other mechanisms deserve further study in order to better define the link between kidney function and site-specific cancer risk,” said lead author Will Lowrance, MD, MPH (University of Utah).

In an accompanying editorial, Jonathan Hofmann, PhD and Mark Purdue, PhD (National Cancer Institute) noted that the study is “an important step forward in characterizing the relationship between chronic kidney disease and risk of renal cell carcinoma and other malignancies. Studies such as this further support an etiologic role of impaired renal function in the development of renal cell carcinoma.”

Study co-authors include Juan Ordoñez, MD, MPH, Natalia Udaltsova,PhD, and Paul Russo, MD, FACS.

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The article, entitled “Chronic Kidney Disease and the Risk of Incident Cancer,” will appear online at http://jasn.asnjournals.org/ on May 29, 2014.

The editorial, entitled “CKD and Risk of Renal Cell Carcinoma: A Causal Association?” will appear online at http://jasn.asnjournals.org/ on May 29, 2014.

Founded in 1966, and with more than 14,000 members, the American Society of Nephrology (ASN) leads the fight against kidney disease by educating health professionals, sharing new knowledge, advancing research, and advocating the highest quality care for patients.

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