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Press Release

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SMELL LOSS MAY CONTRIBUTE TO MALNUTRITION IN INDIVIDUALS WITH KIDNEY DISEASE

Highlights

- Deficits in the ability to smell are common among individuals with chronic kidney disease, and the severity of these deficits increases with the severity of their disease.
- Reductions in several markers of nutrition correlated with patients' impaired sense of smell.
- Treatment with intranasal theophylline, an asthma drug, led to improvements in the ability to smell in 5 of 7 patients with kidney failure.

Malnutrition is one of the major determinants of morbidity and mortality in patients with kidney disease.

Washington, DC (August 3, 2017) — A new study indicates that many patients with chronic kidney disease (CKD) have some degree of smell loss, and that impairments in patients' ability to smell are linked with worse nutritional status. The findings, which appear in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN), are significant because malnutrition is a well-known complication of CKD, and it can contribute to poor quality of life, poor overall health, and even premature death.

Individuals with CKD often experience food aversion and nutritional deficiencies. Because sense of smell, or olfaction, plays a significant role in determining food flavor, researchers suspect that if a patient's ability to smell is reduced, this could lead to symptoms of food aversion and thus decreased food intake, which in turn would contribute to the patient becoming malnourished. To look for potential links between olfaction and nutrition, a team led by Teodor Păunescu, PhD and Sagar Nigwekar, MD, MMSc (Massachusetts General Hospital and Harvard Medical School) studied 161 individuals: 36 with CKD, 100 with kidney failure, and 25 with normal kidney function.

In smell tests, the average odor identification score was lower in patients with CKD (75.6%) or kidney failure (66.8%) than in controls (83.6%). Patients with kidney failure exhibited higher odor threshold than the remaining participants exhibited, whereas all groups had similar scores for subjective smell assessment. "We found that, while most kidney disease patients do not perceive a problem with their sense of smell, deficits in the

ability to smell are actually common among these patients, and the severity of these deficits increases with the severity of their kidney disease," said Dr. Păunescu.

The researchers also found that reductions in several markers of nutrition (such as cholesterol and albumin levels) correlated with patients' impaired sense of smell.

"Our ultimate goal is to have an intervention that can alleviate smell loss, and thus to improve the kidney patients' nutritional status," said Dr. Nigwekar. When the team conducted a proof-of-concept 6-week trial of intranasal theophylline, an asthma drug, they found an improvement in the ability to smell in 5 of 7 patients with kidney failure. "These findings warrant confirmation in a larger study," said Dr. Nigwekar.

Study co-authors include Jeremy Weiser, BA, Sahir Kalim, MD, MMSc, Dihua Xu, PhD, Joshua Wibecan, BS, Sarah M. Dougherty, MPH, Laurence Mercier-Lafond, BS, Kristin Corapi, MD, MMSc, Nwamaka Eneanya, MD, MPH, Eric Holbrook, MD, Dennis Brown, PhD, and Ravi Thadhani, MD, MPH.

Disclosures: Dr. Nigwekar has received speaker honorarium from Sanofi-Aventis and has served as a consultant to Ardelyx. Dr. Thadhani is a consultant to Fresenius Medical Care North America and Celgene, and has received a research grant from Abbott Laboratories. The authors reported no other financial disclosures.

The article, entitled "Characterization and correction of olfactory deficits in kidney disease," will appear online at http://jasn.asnjournals.org/ on August 3, 2017, doi: 10.1681/ASN.2016121308.

Since 1966, ASN has been leading the fight to prevent, treat, and cure kidney diseases throughout the world by educating health professionals and scientists, advancing research and innovation, communicating new knowledge, and advocating for the highest quality care for patients. ASN has nearly 17,000 members representing 112 countries. For more information, please visit www.asn-online.org or contact the society at 202-640-4660.

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