Renal Consult

Renal Consult is edited by **Jane S. Davis, CRNP, DNP,** a member of the *Clinician Reviews* editorial board, who is a nurse practitioner in the Division of Nephrology at the University of Alabama at Birmingham and is the communications chairperson for the National Kidney Foundation's Council of Advanced Practitioners (NKF-CAP); and **Kim Zuber, PA-C, MSPS, DFAAPA,** a semi-retired PA who works with the American Academy of Nephrology PAs and is a past chair of the NKF-CAP. This month's responses were authored by **Nicole DeFeo McCormick, DNP, MBA, NP-C, CCTC,** who is an Assistant Professor in the School of Medicine at the University of Colorado, and **LCDR Julie Taylor, PA-C,** who is with the United States Public Health Service in Boston.

For Patients With CKD, Don't Wait—Vaccinate!

Q What can I tell my kidney patients to increase acceptance of the influenza and pneumonia vaccines during cold and flu season?

The CDC recommends that everyone ages 6 months and older receive an annual flu vaccination, unless contraindicated.[1] Additionally, administration of either the 13-valent pneumococcal conjugate vaccine (PCV13) or the 23-valent pneumococcal polysaccharide vaccine (PPSV23) is recommended for all adults ages 65 and older and for younger adults (ages 19 to 64) with diabetes, chronic kidney disease (CKD), chronic heart disease, and/or solid organ transplant.[1] Despite these recommendations, patients often decline vaccination. What they may not realize is that CKD increases their risk for infection.

In a cohort of more than 1 million Swedish patients, researchers found that any stage of CKD increased risk for community-acquired infection and that the risk for lower respiratory tract infection increased as glomerular filtration rate declined.[2] Patients on hemodialysis have an increased risk for pneumonia and an incidence of pneumonia-related mortality that is up to 16 times higher than that of the general population.[3] Pneumonia also increases the risk for cardiovascular events among all patients with CKD, regardless of stage.[4]

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So, can vaccines reduce these risks in our kidney patients? McGrath and colleagues found that patients with end-stage renal disease (ESRD) who were vaccinated against the flu had lower mortality rates than those who were not vaccinated—even when the vaccine was poorly matched to the circulating virus strain.[5] Additional research has demonstrated that for patients with any stage of CKD, including those on dialysis, the flu vaccine is safe and effective, and its protection may be durable over time.[6]

For pneumonia vaccines, antibody response in patients with CKD may be suboptimal; however, Medicare data have demonstrated that patients with ESRD who are vaccinated against pneumonia have lower rates of all-cause and cardiovascular mortality than unvaccinated patients do.[5] Given their increased vulnerability to vaccine-preventable respiratory illnesses, it is imperative that our kidney patients receive both the flu and pneumonia vaccines. —**NDM**

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The National Kidney Foundation Council of Advanced Practitioners' (NKF-CAP) mission is to serve as an advisory resource for the NKF, nurse practitioners, physician assistants, clinical nurse specialists, and the community in advancing the care, treatment, and education of patients with kidney disease and their families. CAP is an advocate for professional development, research, and health policies that impact the delivery of patient care and professional practice. For more information on NKF-CAP, visit **www.kidney.org/CAP**.

Dental Health: What It Means in Kidney Disease

Q I teach nephrology at a local PA program, and they want us to integrate dental care into each module. What's the connection between the two?

Dental health is frequently overlooked in the medical realm, as many clinicians feel that dental issues are out of our purview. Hematuria worries us, but bleeding gums and other signs of periodontal disease are often ignored. Surprisingly, many patients don't seem to mind when their gums bleed every time they brush; they believe that this is normal, when really, it's not.

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Growing evidence supports associations between dental health and multiple medical issues—chronic kidney disease (CKD) among them. Periodontal disease is one of several inflammatory diseases caused by an interaction between gram-negative periodontal bacterial species and the immune system. It manifests with sore, red, bleeding gums and can lead to tooth loss if left untreated.

Chronic inflammation in the gums is a good indicator of inflammation elsewhere in the body. In and of itself, periodontitis can set off an inflammatory cascade in the body. Poor dentition can also lead to poor nutrition, which then causes a feedback loop, leading to even *more* inflammation.

Patients with periodontal disease have higher levels of C-reactive protein and a higher erythrocyte sedimentation rate than those without the disease.[1] And a recent study by Zhang et al showed that periodontal disease increased risk for all-cause mortality in patients with CKD.[2]

The high cost of CKD from both a financial and personal view makes any intervention worth exploring, as the risk factors are difficult to modify and the CKD population is growing worldwide. We, as medical providers, should reiterate what our dental colleagues have been saying for years: Encourage patients with CKD to practice good dental hygiene by brushing twice a day and flossing daily, in an attempt to improve their overall outcomes. —**JT** **CR**

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