

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 **Zorica Kauric-Klein, APRN-BC, PhD**, who is an Assistant Clinical Professor in the College of Nursing at Wayne State University in Detroit, and **Rebecca Clawson, MAT, PA-C**, who is an Instructor in the PA Program at LSU Health Shreveport in Louisiana.

Bariatric Surgery for CKD

Q I know that diabetes can be controlled with bariatric surgery. Is there any proof that it also helps with kidney disease?

With obesity reaching epidemic proportions in the United States, the number of patients undergoing bariatric surgery has increased in recent years. The procedure has been identified as the most effective intervention for the morbidly obese (BMI > 35).^{1,2}

Obesity is an independent risk factor for the development and progression of chronic kidney disease (CKD).³ It causes changes in the kidney, including hyperfiltration, proteinuria, albuminuria, and reduced glomerular filtration rate (GFR); however, the underlying mechanisms are still poorly understood.⁴ Research has demonstrated bariatric surgery's positive effect on morbidly obese patients with CKD, as well as its benefit for patients with diabetes and hypertension—the two major causes of CKD.^{1,2}

Several studies have found that weight loss resulting from bariatric surgery improves proteinuria, albuminuria, and GFR.^{2,3,5-9} Findings related to serum creatinine (SCr) have been somewhat conflicting. In severely obese patients, the surgery was associated with a reduction in SCr. This association persisted in those with and without baseline CKD, hypertension, and/or diabetes.⁵ However, other studies found that the procedure lowered SCr in patients with mild renal impairment (SCr 1.3-1.6 mg/dL) but increased levels in those with moderate renal impairment (SCr > 1.6 mg/dL).¹⁰ Because the effects of bariatric surgery on kidney function appear to differ based on CKD stage, further research is needed.

Overall, we can conclude that bariatric surgery has merit as an option to prevent and/or slow progression of early-stage CKD in severely obese patients. Larger, long-term studies are needed to analyze the duration of these effects on kidney outcomes,

including the development of end-stage kidney disease. And additional research is needed to determine the risks and benefits associated with bariatric surgery in this population. —ZK-K

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How Low Should You Go? Optimizing BP in CKD

Q I hear providers quote different numbers for target blood pressure in kidney patients. Which are correct?

The answer to this question starts with the word “meta-analysis”—but don't stop reading! We'll get down to the basics quickly. Determining the goal blood pressure (BP) for patients with chronic kidney disease (CKD) comes down to three questions.

1. Does the patient have diabetes? The National Kidney Foundation states that the goal BP for a patient with type 2 diabetes, CKD, and urine albumin > 30 mg/dL

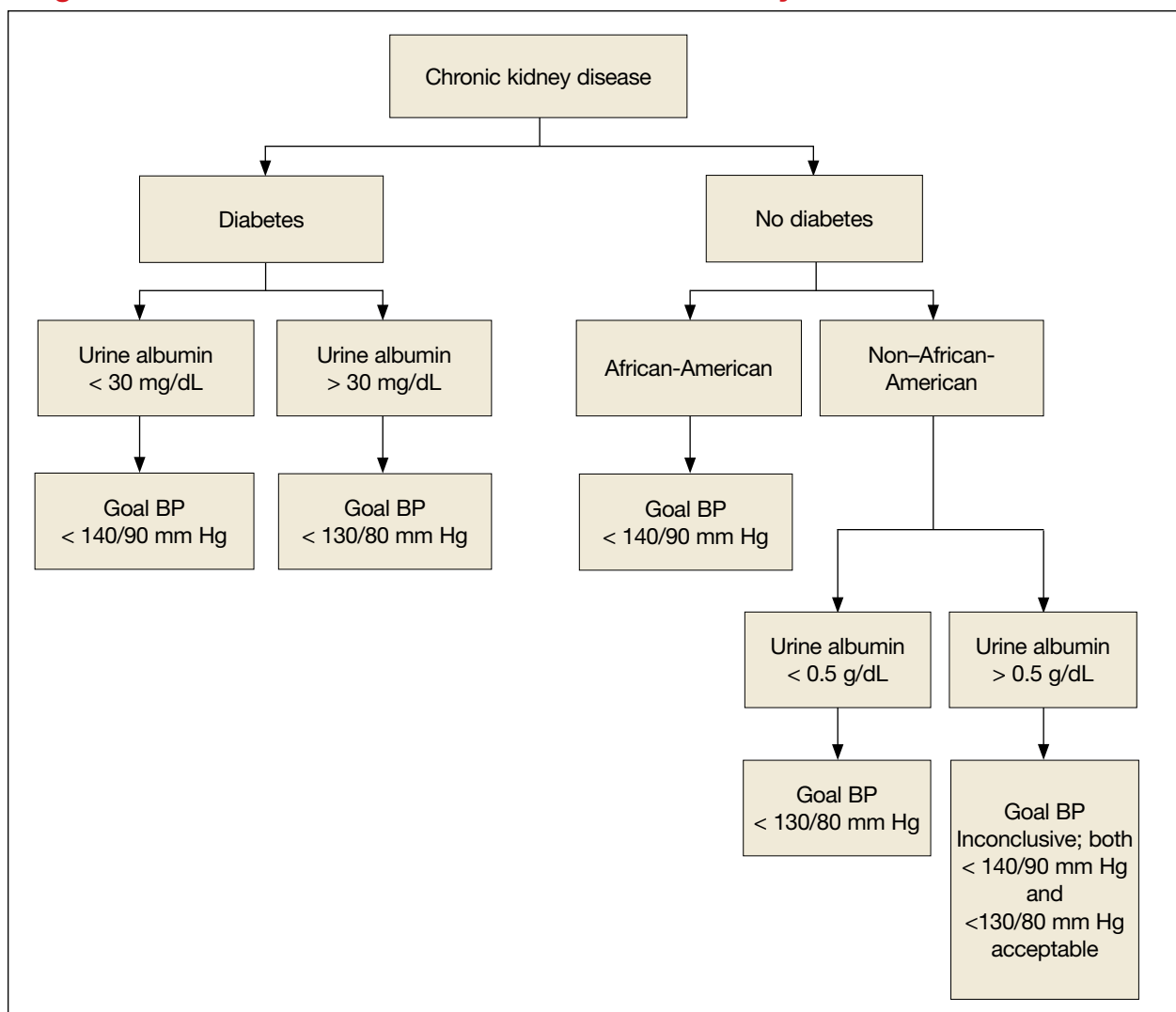
is < 140/90 mm Hg.¹ This is in line with the JNC-8 recommendations for patients with hypertension and CKD, which do not take urine albumin level into consideration.² It is important to recognize that while many patients with CKD do not have diabetes, those who do have a worse prognosis.³

2. Is the patient African-American? A meta-analysis of nine randomized clinical trials found that lowering BP to < 130/80 mm Hg was linked to a slower decline in glomerular filtration rate (GFR) in non-African-continued on page 22 >>



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.

FIGURE
Target Blood Pressure in Patients With Chronic Kidney Disease



Source: Tsai et al. *JAMA Intern Med.* 2017.³

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American patients.³ But this BP was *not* beneficial for African-American patients; in fact, it actually caused a faster decline in GFR.³ Therefore, target BP for African-American patients should be < 140/90 mm Hg.

3. Does the patient have significant albuminuria? An additional subgroup analysis for patients with high levels of proteinuria (defined as > 1 g/d) yielded inconclusive results.³ Patients with proteinuria > 1 g/d tended to have a slower decline in GFR with intensive BP control.³ Proteinuria > 0.5 g/d was correlated with a slowed progression to end-stage renal disease with intensive BP control.³ Again, these were trends and not statistically significant. So, for patients with high levels of proteinuria, it will not *hurt* to achieve a BP < 130/80 mm Hg, but there is no statistically significant difference between BP < 130/80 mm Hg and BP < 140/90 mm Hg.

What, then, are the recommendations for an African-American patient with significant proteinuria? While not addressed directly in the analysis, the study results suggest that the goal should still be < 140/90 mm Hg, since the link between race and changes in GFR is statistically significant and the effects of proteinuria are not. Although the recommendations from this review are many, the main points are summarized in the Figure (page 13).—RC CR

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