Over a mean follow-up of 3.8 years, AKI developed in 184 participants—a rate of 7.8%. Acute kidney injury was more frequent in men and in black patients, as well as those assigned to the intensive blood pressure–lowering therapy.

Two markers of kidney tubular dysfunction—UMOD and α1m—were associated with AKI, independent of eGFR and albuminuria. Hazard ratios were 0.68 per twofold increase in UMOD and 1.20 per twofold increase in α1m. At the highest versus lowest quartiles, baseline UMOD and α1m were more strongly associated with AKI risk (HR 2.04 and 1.57, respectively) compared to the 3-month change in serum creatinine (HR 1.27). In contrast, increases of tubule cell injury markers occurred mainly after the AKI event.

Identifying CKD patients at particularly high risk of AKI may help to inform monitoring and prevention strategies. This study identifies markers of tubule cell dysfunction—lower UMOD and higher α1M—as predictors of future AKI risk. The researchers conclude: "[T]ubular cell function markers may reflect a vulnerable kidney with diminished capacity to counter acute insults and thus identify CKD individuals at heightened risk of future AKI" [Bullen AL, et al. The SPRINT trial suggests that markers of tubule cell function in the urine associate with risk of subsequent acute kidney injury while injury markers elevate after the injury. *Kidney Int* 2019; DOI: https://doi.org/10.1016].

Dual Therapies for Black African Patients: Randomized Trial

Combination therapies including amlodipine improve blood pressure (BP) control in sub-Saharan African patients with hypertension, concludes a trial in *The New England Journal of Medicine*.

The randomized controlled "Comparison of Three Combination Therapies in Lowering Blood Pressure in Black Africans" (CREOLE) trial included 728 black patients with uncontrolled hypertension in six sub-Saharan African countries. Enrolled patients had BP of 140/90 mm Hg or higher on no antihypertensive therapy or a single-drug regimen. The patients' average age was 51 years; 63% were women.

Patients were assigned to one of three antihypertensive drug combinations: the calcium-channel blocker amlodipine (5 mg) plus the thiazide diuretic (HCTZ) (12.5 mg); amlodipine plus the angiotensin-converting enzyme inhibitor perindopril (4 mg); or perindopril plus HCTZ. After 2 months, the dose of each drug was doubled for another 4 months (amlodipine 10 mg, hydrochlorothiazide 25 mg, perindopril 8 mg). Change in 24-hour ambulatory systolic BP from baseline to 6 months was compared between groups.

On analysis of primary outcome data in 621 patients, reductions in BP were greater with the two amlodipine-containing regimens. Compared to perindopril plus HCTZ, between-group differences in systolic BP were 3.14 mm Hg with amlodipine plus HCTZ and 3.00 mm Hg with amlodipine plus perindopril. There was no significant difference between the two amlodipine regimens.

Other outcomes showed a similar pattern, including ambulatory diastolic BP, office BP, and BP response rate. Six-month BP control rates were 76% with amlodipine-HCTZ and 74% with amlodipine-perindopril versus 60% with perindopril-HCTZ. Patients receiving amlodipine-HCTZ had significant reductions in plasma potassium and higher rates of hypokalemia.

Black African patients have a high prevalence of hypertension and typically need at least two antihypertensive drugs to achieve BP control. There is uncertainty regarding the most effective two-drug regimen for black patients with hypertension, reflected by differences in current recommendations.

The CREOLE results suggest a better response with amlodipine, combined with either HCTZ or perindopril, compared to HCTZ plus perindopril in black African patients with uncontrolled hypertension. The researchers note some limitations of their study, including whether the findings can be generalized to black patients with diabetes or those outside of sub-Saharan Africa [Ojji DB, et al. Comparison of dual therapies for lowering blood pressure in black Africans. *N Engl J Med* 2019; DOI: 10.1056/NEJMoa1901113].

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