Physicians treating hospitalized patients for conditions unrelated to the kidneys should pay close attention to common blood and urine tests for kidney function in order to prevent acute kidney injury, new Johns Hopkins Bloomberg School of Public Health-led research suggests.

The findings, published this month in two studies in the American Journal of Kidney Diseases , suggest that while being older, male, African-American or having diabetes are risk factors for developing acute kidney injury, the strongest risk factor is even mildly abnormal results on tests of kidney function.

Acute kidney injury occurs in up to 10% of hospitalized patients and up to 22% of intensive care unit patients worldwide.

"Once a patient suffers an acute kidney injury, we have no effective treatment, so it is important to focus on prevention whenever possible," says Morgan E. Grams, MD, PhD, an assistant professor of epidemiology at the Bloomberg School and a co-author on both of the studies. "Our research tells us that regardless of why someone is in a doctor's care, that doctor needs to pay very close attention to these basic markers of kidney function."

Researchers analyzed data from more than 1.3 million patient records, including 18,567 patients who developed acute kidney injury. They explored a number of factors including results from tests measuring eGFR (estimated glomerular filtration rate), or how well the kidneys are cleaning the blood, and one measuring albuminuria, or the amount of protein found leaking from the kidneys into the urine. The researchers with the Chronic Kidney Disease Prognosis Consortium based at the Bloomberg School found that reduced eGFR rates and elevated albuminuria levels were the strongest risk factors for kidney injury.

It makes biological sense, Grams says, that abnormally functioning kidneys would be more susceptible to kidney injury. But, she adds, physicians treating patients for other conditions may not be as attuned to kidney function when their focus is elsewhere and they may not think about kidney risk in younger patients, for example. She says she hopes this new research reminds doctors to consider the kidneys, especially since this potentially devastating injury is often preventable.

For example, doctors could steer clear of certain medications for patients with abnormal eGFR and albuminuria, regularly test for albuminuria before surgery or, when possible, avoid giving medical tests requiring iodine contrast.

Acute kidney injury is associated with adverse outcomes such as prolonged hospital stays, the beginnings of chronic kidney disease, end-stage kidney disease and mortality.

"Reducing acute kidney injury worldwide can be accomplished simply by paying close attention to the kidney levels of patients in hospitals and ICUs," says Grams, who is also an assistant professor of nephrology at the Johns Hopkins University School of Medicine. "It may really be that simple."

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