

Proteinuria Raises Risk for Acute Kidney Injury

AKI is related to both glomerular filtration rate and proteinuria level.

Acute kidney injury (AKI) raises risk for end-stage renal disease (ESRD) and renal-associated death. It often is iatrogenic (e.g., induced by drugs or contrast dye), and therefore often is preventable. Low estimated glomerular filtration rate (eGFR) predisposes patients to AKI, but the effect of proteinuria on risk for AKI has not been well characterized.

Researchers in Alberta, Canada, studied more than 900,000 adults without ESRD who underwent at least one outpatient measurement each of eGFR and proteinuria (by dipstick or albumin–creatinine ratio) from 2002 through 2006. Patients were stratified by baseline eGFR and proteinuria levels (normal, mild, or heavy) and were followed for a median of 35 months.

Within each eGFR stratum, patients with heavier proteinuria were significantly more likely to be hospitalized with AKI and to develop AKI that required dialysis. For most strata of baseline eGFR and proteinuria, rates of all-cause mortality and the composite outcome of ESRD or chronic doubling of serum creatinine were significantly higher in patients who were hospitalized for AKI than in those who were not. The effect of AKI on these outcomes was weaker for patients with low eGFR and heavy proteinuria at baseline, who were at excess risk even without AKI.

Comment: This study suggests that proteinuria as well as eGFR should be considered in assessing risk for AKI, and it adds to growing evidence that proteinuria should play a greater role in the definition of chronic kidney disease.

— **Bruce Soloway, MD**

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