Acute kidney injury (AKI) is a common occurrence in the inpatient setting. AKI is associated with negative outcomes such as increased morbidity and mortality. The risk of AKI is compounded by the concomitant use of nephrotoxic medications, such as beta-lactam antibiotics.1

In patients presenting with sepsis or other critical infectious illness, empiric antibiotic regimens often target Pseudomonas aeruginosa and methicillin-resistant Staphylococcus aureus. As a result, treatment consists of vancomycin in combination with an anti-Pseudomonal beta-lactam. Individually, these are known nephrotoxins, and recent literature suggests additive nephrotoxicity with this combination. A higher incidence of nephrotoxicity has been observed with co-administration of vancomycin and piperacillin/tazobactam (VPT) specifically.2-6

To examine the effect of pharmacist intervention on AKI incidence following implementation and utilization of a renal-preserving empiric regimen guideline

The following data was collected from patients’ electronic health record: demographics; concomitant nephrotoxic medications; baseline serum creatinine (SCr) and creatinine clearance (CrCl); inpatient unit; length of stay; antibiotic dose, duration, and indication; renal function during antibiotic treatment; and comorbidities.

The primary endpoint was the rate of AKI as defined by AKIN criteria: (1) Stage 1, a rise in SCr by 1.5-fold or 0.3 mg/dL; (2) Stage 2, a rise in SCr by 2-fold; and (3) Stage 3, a rise in SCr by 3-fold or initiation of renal replacement therapy. Secondary endpoints include length of stay (LoS), initiation of hemodialysis, duration of antibiotic therapy, and time to AKI. Continuous data was analyzed using the student’s t-test, and nominal data was analyzed using the chi-squared test.

The authors of this study have no conflicts of interest to disclose.

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