Preventing Drug Associated Acute Kidney Injury in the Intensive Care Unit

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Drugs contribute to 20-30% of acute kidney injury (AKI) events in the intensive care unit (ICU). Drugs are a modifiable exposure presenting the opportunity for interventions to prevent AKI occurrence or ameliorate AKI severity. Identifying the nephrotoxins to target for surveillance is the first step in risk assessment and prevention. Discussed in this presentation are the results of a Delphi survey of international experts that provides perception about the most nephrotoxic drugs to target for surveillance in the ICU. Comprehensive nephrotoxin surveillance extends beyond individual drugs to monitoring drug combinations for burden and drug-drug interactions. The next step in stewardship is risk assessment for potential drug associated AKI, thus providing time for interventions before AKI onset. Approaches that have been used to identify risk for drug associated AKI are 3 drug nephrotoxin alerting and use of stress/damage biomarkers. Other clinical decision support alerts that facilitate early detection of drug associated AKI are knowledge/rule-based alerts and machine learning algorithms. The clinical benefit to the clinical decision support alerts for drug associated AKI is still under evaluation. A key to preventing drug associated AKI is a coordinated nephrotoxin stewardship strategy that includes nephrotoxins to target for surveillance, risk assessment methods and early detection tools.