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Title: *Acute Kidney Injury Pre and Post Implementation of Hydration Policy in Cystic Fibrosis Patients*

Background: Cystic fibrosis (CF) is a hereditary disease that causes mucous thickening in the interstitium of the lungs, pancreas, gastrointestinal and reproductive tract. This thickened mucous creates an ideal environment for the growth of multiple organisms, thus requiring the use of numerous nephrotoxic antibiotics throughout many patients with CF lifetimes.

Objective: The objective of this study is to determine the effectiveness of the hydration protocol implemented at Cardinal Glennon Children's Hospital in St. Louis in preventing the development of acute kidney injury (AKI) in CF patients.

Design, Setting and Participants: A retrospective chart review was performed on 132 patients at Cardinal Glennon Children's Hospital to include patients with cystic fibrosis who were exposed to nephrotoxic antibiotics to determine incidence of AKI as defined by the pediatric Risk, Injury, Failure, Loss, End Stage Renal (pRIFLE) guidelines before and after the start of the hydration protocol. Patients who did not develop AKI were used as the control group.

Results: A total of 16/132 cases (12.1%) of AKI were discovered and staged based on the pRIFLE guidelines. Patients who were admitted after implementation of the hydration protocol were less likely to develop AKI compared to those who were admitted before [OR = 0.21; 95% CI 0.063 to 4.06]. AKI patients who were exposed to more than two nephrotoxic medications were more likely to be diagnosed with a higher stage of AKI compared to those on one or less nephrotoxic medications [OR = 0.31; 95% CI 0.043 to 8.47].

Conclusion and Relevance: AKI is a potentially life-threatening condition that in many cases can be avoided with proper monitoring and hydration management, especially during the use or intended use of nephrotoxic antibiotics.