Drugs as Risk Factors of Acute Kindey Injury in Critically ill Children

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Abstract

Background: Acute kidney injury (AKI) is a serious condition in critically ill children. Nephrotoxic medication exposure is a common contributing factor to AKI, but little literature is available in paediatrics. The aim of the study was to assess a potential association between drugs and the risk of developing AKI.

Methods: We performed a retrospective case-control study in a paediatric intensive care unit (PICU). Cases were patients who developed AKI during PICU stay. Patients without AKI served as controls and were matched to cases on age and gender in a one to one ratio.

Results: 100 case-control pairs were included. Cases were not statistically different from controls with regard to median weight and main diagnoses, but differed with regard to the need of mechanical ventilation, the severity of illness, and the median length of PICU stay. Multivariate models revealed a statistically significantly higher risk of developing AKI for patients treated with Metamizol, Morphine, Paracetamol and Tropisetron. A similar risk could be shown for medication groups, namely glucocorticoids, betalactam antibiotics, opioids and non-steroidal anti-inflammatory drugs.

Conclusion: The results suggest that drugs are associated with acute renal dysfunction in critically ill children, but the multifactorial causes of AKI should be kept in mind.