

SIGNIFICANCE STATEMENT

Diagnosing AKI in children using current definitions is problematic, because low and varying serum creatinine levels are characteristic in young children. This study estimates for the first time the reference change value (RCV) of creatinine on the basis of age and baseline creatinine level in children, and it proposes and tests a new creatinine RCV-based criterion for pediatric AKI: pediatric reference change value optimized for AKI in children (pROCK). The study shows that pROCK outperforms criteria currently used to diagnose AKI in children in predicting the mortality risk and adverse outcomes, especially in children who need intensive care. The new criterion is easily applicable in clinical practice and shows promise for improving clinicians' ability to diagnose AKI in children.