

Abstract

Background: The prevalence of acute kidney injury (AKI) in children with severe malaria in sub-Saharan African may have been underestimated. The study aimed to determine the prevalence of AKI in children with severe malaria and its association with adverse hospital outcomes.

Methods: At presentation, we measured complete blood count, serum bilirubin, and serum electrolytes, urea and creatinine in children with severe malaria. At 24 h after hospitalization, we repeated serum creatinine measurement. Urine passed in the first 24 h of hospitalization was also measured. We defined AKI and its severity using the Kidney Disease: Improving Global Outcome AKI guidelines.

Results: The study involved 244 children (53.3% males) with a median age of 3.5 (1.9–7.0) years. One hundred and forty-four (59%) children had AKI, and it reached maximum Stages 1, 2 and 3 in 56 (23%), 45 (18.4%) and 43 (17.6%) children, respectively. The majority (86.1%) with AKI had only elevated serum creatinine. Mortality increased with increasing severity of AKI on univariate analysis but weakened on multiple logistic regression. Mortality was also higher in those with both oliguria and elevated serum creatinine than in those with elevated serum creatinine only (50% vs. 4.8%, $p < 0.001$). Furthermore, children with AKI spent three days more in hospital than those without AKI ($p < 0.001$).

Conclusions: Acute kidney injury complicates severe malaria in 6 out of every 10 children and is commonly identified using elevated serum creatinine. It is also associated with adverse hospital outcome.