



Prevalence and Risk Factors of Acute Kidney Injury in Hospitalized Children with Dengue Infection Using Kidney Disease Improving Global Outcomes Criteria

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To the Editor: Dengue viral infection (DVI) causes illnesses ranging from fever to dengue shock syndrome (DSS). Severe DVI is associated with acute kidney injury (AKI) [1]. An increase in serum creatinine levels leads to morbidity and chronic kidney disease [2, 3]. This retrospective study assessed the rate, risk factors, and short-term outcomes of AKI in children with DVI who were aged 1 mo–18 y and hospitalized from 2011–2020 according to the Kidney Disease Improving Global Outcomes (KDIGO) definition (Supplementary Table S1).

Of 259 participants, AKI was determined using calculated baseline creatinine levels in 200 participants (77.2%) [4]. AKI developed in 56 participants (21.6%) [stage 1: 40 (71.4%); stage 2: 6 (10.7%); and stage 3: 10 (17.9%)] (Supplementary Fig. S1). Participants with AKI were older, had higher body mass index Z-score, and hemoglobin, hematocrit and potassium levels, but lower platelets, bicarbonate, and albumin levels (Supplementary Table S2). Patients' age and DSS were associated with AKI with odds ratios of 1.44 (95% CI 1.16–1.79, $p=0.001$) and 11.39 (95% CI 1.47–87.96, $p=0.02$), respectively (Supplementary Fig. S2).

There were seven in-hospital deaths (2.7%); all had stage 3 AKI. The duration of stay, renal replacement therapy, critical care requirement, and mortality rate were higher in the AKI group (Supplementary Table S3). Among 49 survivors, 26 (53.1%) had creatinine measurements after AKI [21/40 survivors of stage 1 (52.5%), 2/6 survivors of stage 2 (33.0%), and 3/3 survivors of stage 3 (100%)]. Sixteen (61.5%) and 10 participants (38.5%) had follow-up creatinine higher than baseline creatinine <10% and >10%, respectively.

AKI is commonly encountered in hospitalized children with DVI. Clinicians should identify AKI early and initiate proper management, especially in older children with DSS. Ischemic kidney injury likely caused AKI as DSS was an independent risk of AKI in the present study. The lack of measured baseline creatinine levels and short follow-up periods were the limitations of this study.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s12098-023-04524-w>.

Declarations

Ethics Approval The Human Research Ethics Committee of the Chulalongkorn University Faculty of Medicine approved this study (approval number 677/63).

Consent to Participate Due to the retrospective nature of the study, the Institutional Review Board waived the need for formal consent. The data were kept anonymous.

Conflict of Interest None.

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