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Definition and Etiology of Acute Kidney Injury in Children

We read with interest the research letter by Nasir, *et al.* [1], describing the etiological profile of 100 children with acute renal failure (ARF) from Kashmir. The study is of relevance considering the significant mortality and morbidity associated with the condition, especially in children. It should be noted however, that due to usage of more than 30 definitions of ARF in the literature, leading to wide variations in the reported incidence and outcome, the term ARF was replaced recently by acute kidney injury (AKI), including a new classification system [2, 3] with a view to provide a uniform definition, standardize patient care, enhance the ability to design prospective studies and evaluate potential prophylactic and treatment strategies. Based on this, AKI is an abrupt (within 48 hours) reduction in kidney function currently defined as absolute increase in serum creatinine of either ≥ 0.3 mg/dL or a percentage increase of $\geq 50\%$ or a reduction in urine output (documented oliguria of < 0.5 mL/kg/hr for > 6 hours). This new definition is applicable across all ages [2, 3]. Three grades of severity for AKI have been described.

The authors of this research letter, while acknowledging the new term AKI in the introductory statement, have used an outdated definition to diagnose the condition (ARF) in their study subjects based on old references. The lack of usage of a standardized definition for study of the clinical profile of AKI impedes rational comparison of epidemiological studies on AKI, limits generalization of data and prevents patient stratification based on AKI severity. Hence, adherence to the new definition is essential. In recent years, a number of studies have been conducted across the world, in adults as well as children to study the incidence and etiological profile of AKI based on the new terminology [4]. The new definition has been validated in these studies.

Another notable feature in the etiological profile of AKI in this study is the absence of cases with snake envenomation. Snake envenomation is known to be an important cause of AKI in certain regions of India. Cases of snakebite envenomation among Kashmiri children have been reported earlier [5]; many of them being due to viper bites, which are known to be associated with systemic manifestations such as AKI, hypotension and coagulopathy. The authors also mention that drug induced ARF comprised 5% of cases. If the drugs could be specified, it would be a learning point for the readers.

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