Pediatric Acute Kidney Injury Survivors Need Risk Stratification and Individualized Follow-Up

We read with great interest "Long-term kidney outcomes following childhood acute kidney injury receiving dialysis: A population-based cohort study" by Robinson et al.1 In this retrospective cohort study, 1699 pediatric survivors of dialysis-treated AKI were followed up for a median of 9.6 years to evaluate long-term kidney outcomes. The study suggested that survivors of AKI were at significantly increased risk of a composite outcome of kidney failure or death versus matched comparators. Interestingly, no such difference was observed in the subgroup analysis of patients who underwent cardiac surgery during their dialysis-treated AKI admission.

Irrespective of children or adults, AKI is a major cause of morbidity and mortality with a complex etiology. Different types of AKI, such as septic AKI and surgery-associated AKI, may have distinct pathologic mechanisms and, hence, require different preventive or therapeutic strategies. Although the early versus late initiation of renal replacement therapy in critically ill patients with acute kidney injury trial, mainly focusing on surgery-associated AKI, found early RRT compared with delayed RRT reduced mortality over the first 90 days, the initiation of dialysis early versus delayed in the intensive care unit trial on septic AKI identified no significant difference in 90-day mortality.2 One of our studies revealed that serum neutrophil gelatinase-associated lipocalin could be used as a predictor for successful RRT discontinuation in patients with nonseptic AKI, rather than in those with septic AKI.3 In the study by Robinson et al.,1 it might be similarly speculated that pediatric survivors of cardiac surgery–associated AKI and other types of AKI had different clinical trajectories in later life, thus necessitating risk stratification and adaptive follow-up surveillance.

As the authors discussed, previous studies of pediatric AKI bear conflicting results. This inconsistency might be partly attributed to notable heterogeneity in terms of study design, sample size, follow-up, and end points. One strength of the current research is the application of the major adverse kidney events end point, which is recommended by the National Institute of Diabetes and Digestive and Kidney Diseases workgroup to capture clinically important, patient-centered outcomes.4 This study was also advantaged by the utilization of health administrative databases, thus assembling a large patient cohort with minimal loss to follow-up. It is worth mentioning that the authors used the acute dialysis code rather than the classic Kidney Disease Improving Global Outcomes or RIFLE criteria to define dialysis-treated AKI, which was unfit for earlier stages of AKI. Meanwhile, the cause of AKI was not clearly specified. With a code of cardiac surgery during index hospitalization, a child was suspected to have cardiac surgery–associated AKI, but the diagnosis should be further validated. We believe that large-scale prospective cohort studies using standardized end points, such as major adverse kidney events, are warranted to guide risk stratification and individualized management for pediatric survivors of AKI of different etiologies.

DISCLOSURES
All authors have nothing to disclose.

FUNDING
This work was supported by the West China Hospital, Sichuan University 1.3.5 project for disciplines of excellence (2020HXPH014).

ACKNOWLEDGMENTS
The funding source had no involvement in this study.

REFERENCES

See related letter to the editor, “XXX” on pages XXX–XXX, reply, “XXX” on pages XXX–XXX, and original article “Long-term kidney outcomes following

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doi: https://doi.org/10.1681/ASN.2021060753