A study of acute kidney injury in renal allograft recipients and its impact on short-term outcome of graft function

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Background: Renal allograft recipients (RAR) are at high risk of acute kidney injury (AKI). The etiology, risk factors, and outcomes of AKI in RAR differ from that of AKI in the community setting. This study aimed to evaluate the spectrum and impact of AKI episodes on RAR outcome.

Methods: This was a single-center, prospective observational study on 84 live RAR patients who developed 105 AKI episodes as per Kidney Disease Improving Global Outcome (KDIGO) criteria between January 2018 to December 2019. These patients were followed for 3 months after AKI episodes.

Results: The mean age of our study populations was 38.1±13.2 years. Mean serum creatinine at the time of AKI episode was 2.63±0.95 mg/dL. The causes of AKI in our study population were infections (n=48, 45.7%), dehydration (n=25, 23.8%), biopsy-proven rejection (n=9, 8.6%) calcineurin inhibitor toxicity (n=10, 9.5%), biopsy-proven acute tubular necrosis (n=4, 3.8%), recurrence of native kidney disease (n=4, 3.8%), and miscellaneous causes (n=5, 4.8%). Most of the AKI episodes (62.9%) developed in the first year of the transplant, while as 29 cases (27.6%) developed between first and second post-transplant year and 10 cases (9.5%) developed AKI beyond 2 years post-transplant. Sixty-four cases (60.9%) of AKI were in KDIGO stage 1, 30 cases (28.6%) were in AKI stage 2, and 11 cases (10.5%) were in AKI stage 3. Previous episodes of AKI (P=0.004), need for dialysis at the time of AKI (p=0.002), and recurrence of native kidney disease (P=0.0001) were the factors associated with non-recovery of graft functions at 3 months of follow-up. At 3 months of follow-up, AKI had a significant impact on allograft function.

Conclusions: In our study, AKI in RAR had a significant impact on allograft function.

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