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**Ashwani K Singal**

University of Alabama at Birmingham, USA

Acute kidney injury among patients with cirrhosis

Aim: Data on prevalence of acute kidney injury (AKI) and its impact on outcomes are limited among patients listed for liver transplantation (LT).

Methods: We prospectively recruited LT listed patients (03/14 to 12/2015) and followed for development of AKI (increase in serum creatinine (SC) by ≥ 0.3 mg/dL compared to baseline within past 3 months) until removal from list.

Results: Of 278 patients (mean age 57 years, 63% males, 83% white, and median listing (MELD) 17.5) were analyzed. Median (range) GFR by modified diet in renal disease-6 (MDRD-6) equation was 66 (2-250) mL/min. Over 1 year follow-up, 109 developed AKI with a cumulative probability of 39%. Pre-renal etiology contributed in 80 (73%), commonly from hypovolemia in 57, with 16 patients having hepatorenal syndrome (HRS). Patients with AKI differed from patients without AKI for age (56 ± 9 vs. 54 ± 9 years $P=0.05$), listing MELD (21 ± 8 vs. 17 ± 6 , $P<0.0001$) and listing MDRD-6 (55 ± 24 vs. 82 ± 38 , $P<0.0001$). Compared to patients with listing MELD <16 , odds of AKI development at 1 year were 1.3, 3.0, 4.6 and 8.5 fold for respective listing MELD 16-20, 21-25, 26-30 and >30 . Of 109 AKI patients, 75 were treated in the hospital with median (range) length of stay 12 (0-77) days and dialysis in 16 (21%). 56 patients died over 1 year while waiting for LT, with over 2 fold risk of dying in presence of AKI: 1.92 (1.08-3.42). A total of 139 received LT with no differences for AKI (47 vs. 49%, $P=0.52$). Second episode of AKI occurred in 23 of 109 (23%) patients with 1 year probability of 80% after excluding patients dying or receiving LT.

Conclusion: AKI is common among patients listed for LT with negative impact on transplant free survival. Studies are needed among patients with cirrhosis and listed for liver transplantation as the basis of a) defining biomarkers for earlier diagnosis and b) developing strategies to reduce occurrence of AKI.

Biography

Ashwani K Singal joined the UAB after completing AASLD (American Association for the Study of Liver Diseases) sponsored Advanced Fellowship in Transplant Hepatology at the Mayo Clinic, Rochester, Minnesota. His clinical and research interests include steatohepatitis (due to alcohol use as well as due to non-alcohol fatty liver disease), simultaneous liver-kidney transplantation and porphyria cutanea tarda. His research is currently funded from UAB, ACG, and NIH. He has long standing relationship with AASLD and has published over 100 papers in various reputed journals with over 140 presentations at national and international meetings. He has also edited two books on hepatitis B.

asingal@uabmc.edu