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Frequency and risk factors of acute kidney injury following large volume paracentesis in cirrhotic patients with spontaneous bacterial peritonitis.

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Objectives: Patients with decompensated cirrhosis are frequently encountered by the nephrologist because of the development of acute kidney injury (AKI) and need for renal replacement therapy (RRT) in the setting of spontaneous bacterial peritonitis (SBP) which occurs in over 30% of such patients and is associated with high mortality rate. Clinical awareness, prompt diagnosis and immediate treatment are necessary to reduce mortality and morbidity. There is a promising role of large volume paracentesis (LVP) in SBP but fear remains if AKI develops when fluid is removed from peritonium and what are the risk factors for its development and its true burden.

Methods: A total of 226 patients with diagnosed SBP were assessed in this cross sectional study. Among these patients 122 underwent LVP while 104 were managed conservatively. Baseline and 48 hours clinical outcomes including creatinine and ascitic fluid total leucocytes (TLC) count were compared. Total length of stay, special care unit stay and need for hemodialysis (RRT) were assessed among other factors. Albumin infusion, fluid management and similar antibiotics as per empiric antibiotic regimen according to prevalent microbial resistance pattern were administered.

Results: Both the groups were comparable in respect to demographic features and comorbid conditions. Frequency of AKI was 12.3% (24 patients), 15.4 % (16 patients) in no LVP group developed this while 8 patients (6.6%) in LVP group, high MELD and CTP scores, another statistically significant improvement in post 48 hours creatinine among patients undergoing LVP (p-value <0.001) whereas no significant improvement was seen in patients without LVP (p-value 0.32). Similar improvements were seen for special care unit stay and total length of stay in patients with LVP, need for RRT and incidence of post paracentesis induced circulatory dysfunction (PPCD) was also low in patients of LVP group.

Conclusions: LVP has beneficial impact on AKI frequency and very minimal risk in SBP.

Table showing outcome of LVP in SBP patients in terms of AKI and its risk factors