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Positive renal outcomes of large volume paracentesis in liver cirrhotic patients with spontaneous bacterial peritonitis.

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Objectives: Spontaneous bacterial peritonitis (SBP) occurs in 10-30% of cirrhotic patients and is associated with high mortality rate among hospitalized patients and its associated incidence of acute kidney injury (AKI) and hepatorenal syndrome (HRS). Large volume paracentesis (LVP) decreases the burden of infective fluid. Outcomes of LVP in SBP patients has not been clearly addressed in previous studies. Furthermore, in the abcense of more viable therapeutic options for preventing kidney impairment in SBP, the managment realy looms around time and need for renal replacment therapy (RRT). This study will assess the outcome of LVP in patients with SBP, both in terms of mortality, length of stay and effect on renal function

Methods: This cross-sectional study was conducted in the Medicine Unit of Aga Khan University Hospital. A total of 113 patients with diagnosed SBP were assessed. Among these patients 61 underwent LVP while 51 were managed conservatively. LVP was done as per routine practice of safety and monitoring. All the patients received intravenous Albumin. Baseline and 48 hours clinical outcomes (including creatinine and ascitic fluid total leucocytes (TLC) count) were compared. The development of AKI and post-paracentesis induced circulatory dysfunction (PPCD) were also assessed and model for end-stage liver disease (MELD) and Child-Turcotte-Pugh (CTP) scores were also calculated.

Results: There was 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 incidences of AKI and HRS.

Conclusions: LVP in patients with SBP translates into significantly positive outcomes in terms of length of hospital stay, spcecial care unit stay, need for RRT and development of AKI and HRS. Hence LVP is recommended as a fovoured therapeutic option.

Positive renal outcomes of LVP in SBP

	All patients	LVP		
	n=113	No n=52 Mean (SD)*	Yes n=61 Mean (SD)	p-value[b]
Age	53.87 (10.98)	52.29 (10.98)	55.21 (10.89)	0.16
SCU stay (days)	2.08 (2.81)	3.23 (3.45)	1.10 (1.56)	<0.001***
Total stay (days)	4.93 (3.60)	6.44 (4.58)	3.64 (1.63)	<0.001***
Baseline Ascitic fluid TLC	5559.77 (10735.36)	7221.37 (12523.50)	4143.33 (8796.86)	0.14
48 hours Ascitic fluid TLC	1450.34 (2666.35)	2005.08 (2683.29)	986.54 (2583.04)	0.04*
Baseline Creatinine (mg/dl)	1.69 (1.36)	1.96 (1.73)	1.47 (0.88)	0.68
48 hours Creatinine (mg/dl)	1.32 (1.31)	1.71 (1.77)	0.99 (0.58)	0.004**
Baseline Sodium (mEq/L)	128.05 (7.20)	127.77 (6.66)	128.30 (7.67)	0.7
Baseline Albumin (g/dL)	2.45 (0.56)	2.30 (0.57)	2.58 (0.52)	0.01*
INR	1.82 (0.93)	1.82 (0.56)	1.82 (1.16)	0.97
Total Bilirubin (mg/dL)	5.23 (6.41)	4.98 (5.71)	5.45 (6.98)	0.70
CTP	11.64 (1.79)	11.77 (1.78)	11.52 (1.81)	0.47
MELD	22.11 (8.10)	23.01 (8.74)	21.35 (7.50)	0.28
TLC (x10^3/µL)	12.51 (7.72)	14.28 (9.58)	11.01 (5.32)	0.03*
PPCD	25 (23.4%)	16 (64.0%)	9 (36.0%)	0.01*
AKI	6 (5.3%)	4 (7.7%)	2 (3.3%)	0.26

*Significant at p<0.05; **Significant at p<0.005; significant at p<0.0005, * parenthesis show standard deviation unless % sign is shown, [b]P-value calculated using independent sample t-test or chi-squared test. LVP=Large Volume Paracentesis, SCU=Special Care Unit, CTP=Child-Turcotte-Pugh, MELD=Model of End-Stage Liver Disease, PPCD=Post Paracentesis Circulatory Dysfunction.