

Hepatorenal Syndrome: Examine the Treatment Effectiveness of Terlipressin and Albumin

ZAFAR AHMAD KHAN¹, MUZAMUL SHAHZAD², JAVED IQBAL³, MUHAMMAD IMRAN ASLAM⁴, ALTAF AHMAD YAR⁵, MUNAZA JAVED⁶

¹Assistant Prof. of Medicine, Bolan University of Medical and Health Sciences, Quetta

²Professor of Medicine, Avicenna Medical & Dental College, Lahore

³Associate Professor of Medicine, CMH Lahore

⁴Assistant Professor of Medicine, Social Security Teaching Hospital, Lahore

⁵Assistant Professor of Medicine, Avicenna Medical & Dental College, Lahore

⁶Associate Professor of Medicine, Azhra Naheed Medical College, Lahore

Correspondence to: Zafar Ahmad Khan, Email: doctorzakhan@yahoo.com, Cell: 03003800221

ABSTRACT

Objective: To find the efficacy of albumin and terlipressin in the management of hepatorenal syndrome.

Study Design: Randomized control trial.

Place and Duration Study: Department of Medicine, Bolan University of Medical & Health Sciences, Quetta from 1st March 2020 to 30th September 2020.

Methodology: Eighty four patients of both the genders were enrolled. Complete demographic details regarding age, sex, gender, weight and height was noted. Study participants were divided into two groups; patients of group A received terlipressin with albumin whereas patients of group B only received albumin. Comparative results were obtained and effectiveness examined for 15 days.

Results: Mean age of group A participants was 42.38±8.46 years and there were 28% males and 62% female. Whereas in Group B, mean age of study participants was 41.27±9.51 years and there were 54% males and 45% females. Similarly, mean BMI of group A and group B patients were 23.24±2.18kg/m² and 22.18±2.24 kg/m² respectively. Almost 78% efficacy was observed in group A while only 47% was observed in group B.

Conclusion: Higher effectiveness with terlipressin with albumin was observed in contrast to albumin alone.

Keywords: Terlipressin, Efficacy, Albumin, Hepatorenal syndrome

INTRODUCTION

Hepatorenal syndrome (HRS) is a common renal failure in patients with advanced cirrhosis, with a very poor outcome.^{1,2} Hepatorenal syndrome has become an important problem in clinical practice due to lack of appropriate treatments. Furthermore, HRS is a common cause of death before transplant in people who are candidates for liver transplantation, and is associated with rising morbidity and decreased survival after transplantation.³⁻⁵

Terlipressin and albumin vasoconstrictive therapy can induce remission of HRS type 1 in 40-60% of patients and renal recovery in more than 70% of patients following withdrawal.⁶⁻⁹ Additional treatment options include noradrenaline, midodrine in combination with octreotide and trans-jugular porto systemic shunt (TIPS), as well as extracorporeal.¹⁰

As we have successful therapeutic options for varicella bleeding, ascites or encephalopathy, we have a rising number of HRS patients. Cheap care for Hours in our cirrhosis patients is required as a matter of urgency. We also want this therapy restricted to patients most likely to respond by recognizing factors linked to better outcomes in the light of possible side effects linked to vasoactive medication. Our goal of the study was to evaluate the effectiveness in improvement of renal function and identify factors related to favourable treatment outcomes of terlipressin in combination with albumin in patients with HRS type-1.

MATERIALS AND METHODS

This randomized control trial was conducted at Department of Medicine, Bolan University of Medical & Health Sciences Quetta from 1st March 2020 to 31st September 2020. Eight four patients within the age group of 20-60 years were enrolled. A written informed consent was taken and complete demographic details regarding age, sex, gender, weight and height was noted. Patients with renal failure and ischemic heart disease were excluded. Study participants were divided into two groups; patients of group A received terlipressin with albumin whereas patients of group B only received albumin. Group A patients were receiving terlipressin (2-4mg/day) with IV albumin (20-40mg/day). While patients of group B were receiving 20-40mg/day albumin alone for 15 days. Data was analyzed by using SPSS version 24. Chi-square test was

performed for statistical analysis considering p-value <0.05 as significant.

RESULTS

The mean age of patients in Group A was 42.38±8.46 years and in Group B were 41.27±9.51 years. There were 26 (61.90%) females and 16 (28.10%) males in group A while in Group B, 19 (45.24%) females and 23 (54.76%) males (Table 1). Group A patients were receiving terlipressin (2-4mg/day) with IV albumin (20-40mg/day). While patients of group B were receiving 20-40mg/day albumin alone for 15 days. Almost 78% efficacy was observed in group A while only 47% was observed in group B. No significant difference in mortality rate was observed in 3 months' follow-up with p-value<0.05 (Table 2).

Table 1: Baseline details of study participants

Variable	Group A	Group B
Gender		
Male	16 (28.10%)	23 (54.76%)
Female	26 (61.90%)	19 (45.24%)
Mean age (years)	42.38±8.46	41.27±9.51

Table 2: Efficacy of medication in both groups

Efficacy	Group A		Group B	
	No.	%	No.	%
Yes	33	78.57	20	47.62
No	9	21.43	22	52.38

P value<0.05

DISCUSSION

In this study we determined that albumin terlipressin was highly efficient in patients, compared to albumin patients alone, these findings were comparable to Heidmann et al¹¹ study. In a study of 39 patients Nazar et al¹² demonstrated a 46 percent response with a creatinine decline lower than 1.5 mg/dl, but creatinine >1.5 mg/dl has been observed. The cumulative reaction rate, as noted during our analysis, varies between 45 and 80 percent of multiple meta-analytical studies that analyse randomized studies.^{13,14}

In 46 HRS type 2 patients with a response rate of 76%, Ghosh et al¹⁵ performed a randomized trial to compare

noradrenaline with terlipressin, which was close to our findings. A very recent study has shown that combined treatment for albumin/terlipressin is safe and successful in sepsis-associated patients with acute liver syndrome, which is not available so far in the United States and Canada for early administration of this treatment.¹⁶

As a result, 78.57 percent of patients reported combined terlipressin and albumin responses compared to 58.3%.¹⁷ Wang et al¹⁸ also reported that terlipressin and albumin combination response rate was 58.3%. Terlipressin tends to be effective in HRS in conclusion with albumin therapy.

CONCLUSION

The albumin terlipressin was more efficient than albumin in the examination of hepatorenal syndrome only. This treatment is most likely to be accompanied by patients with lower baseline serum creatinine.

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