

Terlipressin and Octreotide in Esophageal Varices: A Comparative Study

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Abstract

Aim: To Compare the role of Terlipressin And Octreotide in Esophageal Varices

Methods: 30 Cirrhotic Patients with esophageal variceal bleed were taken into consideration. 15 Patients (Group A) were given Terlipressin in the dose of 2g bolus i.v every 4 hours first 2 days. The dose is halved after bleeding controlled & maintained up to 5 days and other 15 Patients were given octreotide in the dose of initial IV bolus 50µg followed by a continuous infusion of 50µg per hour. The infusion maintained for 5 days. Two groups were compared for efficacy and safety.

Result: Total 30 patients were included in the study. Baseline characteristics of two groups were comparable for age, Hb at presentation, Pulse rate, Systolic and Diastolic B.P. Statistical Analysis was done using unpaired T test.

Conclusion: The efficacy of Terlipressin was not inferior to Octreotide as an adjuvant therapy for the control of esophageal variceal bleed.

Keywords: Variceal Bleed, Cirrhosis, Portal Hypertension, Terlipressin, Octreotide

I. Introduction

Variceal bleeding is a major complication of portal hypertension and represents leading cause of death in patients with cirrhosis. (1,2) Early mortality after an episode of acute variceal bleeding remains high (15%-24%) (1,2,3,4,5) Ruptured esophageal varices cause approximately 70% of all upper gastrointestinal (GI) hemorrhages in cirrhosis. (6) Therefore, a variceal origin should be suspected in any cirrhotic patient presenting with a GI bleeding until a diagnostic endoscopy is performed.

Esophageal variceal bleeding is a medical emergency that carries high mortality despite appropriate management. Endoscopic intervention along with pharmacological treatment achieves control of bleeding in nearly 70-80% of episodes of variceal bleeding. (7) Endoscopic variceal band ligation (EVL) has been the recommended preferred procedure for the control of acute variceal bleeding, although endoscopic injection sclerotherapy (EIS) can be used in this setting if EVL proves technically difficult. (8) Adjuvant pharmacological treatment is the standard of care along with EVL for the control of esophageal variceal bleeding.

Terlipressin and Octreotide are two common agents used as an adjuvant agent in the management of variceal bleeding. (9,10) Vasopressin is the most potent splanchnic vasoconstrictor. It reduces blood flow to all splanchnic organs, thereby leading to a decrease in portal venous inflow and to a decrease in portal pressure. The clinical usefulness of vasopressin is limited by its multiple side effects, which are related to its potent vasoconstrictive properties, including cardiac and peripheral ischemia, arrhythmias, hypertension and bowel ischemia. (11)

Terlipressin, a synthetic analogue of vasopressin that has a longer biological activity and significantly fewer side effects, is effective in controlling acute variceal hemorrhage and has been associated with a decrease in mortality. (12) Terlipressin is given as a 2g bolus dose every 4 hours during the first 2 d. The dose is halved after bleeding is controlled and can be maintained for up to 5 days. Administration of terlipressin at low doses in continuous perfusion has been tested in cirrhotic patients with septic shock with promising results. (13,14) Natural somatostatin also causes splanchnic vasoconstriction at therapeutic doses and has proven to reduce portal pressure and hepatic venous pressure gradient (HVPG) during active bleeding. (15,16,17,18) Somatostatin blocks the postprandial increase in portal blood flow and portal pressure. Somatostatin usually given at a continuous perfusion dose of 250mcg/h after an initial 250mcg bolus (which can be repeated up to 3 times during the first hour). The infusion should be maintained for 5 d. (19) or until a 24 h period free of rebleeding has been achieved.

Octreotide is a synthetic analogue of natural somatostatin with similar mechanism of action and longer half life. However, this does not result in longer hemodynamic effects, (20,21) probably due to the development of tachyphylaxis or rapid desensitization. (22) Octreotide used as an initial I.V bolus 50 µg followed by a continuous infusion of 50µg per hour. Octreotide is indeed effective in preventing early rebleeding with no apparent effect on mortality. (23) It has been speculated that this beneficial effect of octreotide may be related to its capacity of blunting postprandial increase in portal pressure. (24)

II. Material And Methods

Study Population

Patients with cirrhosis who presented to the emergency room with upper gastrointestinal bleed (GI) bleed were included in the study.Total 30 patients were included in the study.

Exclusion Criteria

Patients with nonvariceal bleed on endoscopy.Patients with gastric variceal /portal hypertensive gastropathy related bleed on endoscopy. Patient underwent sclerotherapy for esophageal varceal bleed Place of Study Apollo Hospital Bhubaneswar, India

Methods: Out of 30 patients 15 patients were included in Group A and 15 patients were included in Group B. Group A received terlipressin 2g bolus dose every hours during first 2 days.The dose is halved after bleeding is controlled and maintained up to 5 days. Group B received octreotide initial I.V bolus 50µg followed by a continuous infusion of 50µg per hour. The infusion is maintained for 5 days. All the patients were observed for 5 days.

III. Statistical Analysis

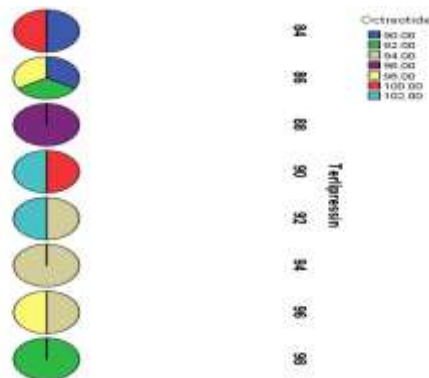
Statistical Analysis was done by applying unpaired t-test.

IV. Result

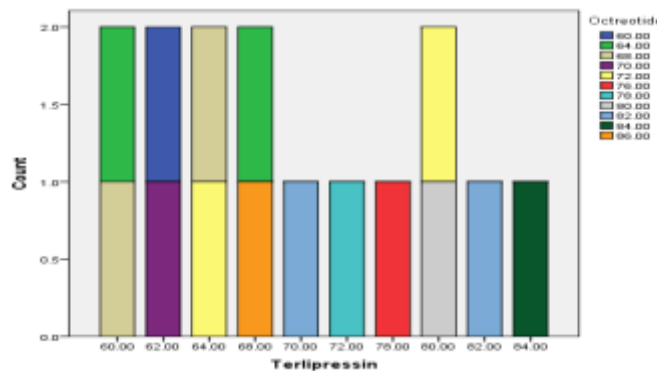
Parameters	Terlipressin	Octreotide	P value
Age(yrs)	50.2±2.6	48.8±2.5	< 0.1
Hb at presentation	8.6±0.9	8.3±1.5	<0.5
Pulse in ER(beats/min)	90.0±4.5	95.8±4.03	<0.001
Systolic BP in ER (mmHg)	108.9±6.4	103.3±6.3	<0.05
Diastolic BP in ER (mmHg)	70.2±8.5	73.7±8.1	<0.1

BP: Blood Pressure,ER:Emergency Room,Hb:Hemoglobin,yrs:Years

(Table-1) Comparison of Terlipressin and Octreotide groups of patients in whom control of Variceal Bleed was achieved



(Graph-1)Comparison of Pulse Rate Between Terlipressin and Octreotide



(Graph-2) Effect of Terlipressin and Octreotide on Diastolic B.P

Graph-1 shows comparison of pulse rate after administration of Terlipressin and Octreotide. Graph -2 shows the effect of Terlipressin and Octreotide on Diastolic B.P. Above two graph indicates there is not much difference in Diastolic B.P and Pulse rate in between patients receiving Terlipressin and Octreotide.

V. Discussion

Esophageal variceal band ligation (EVL) had replaced injection sclerotherapy (EIS) for Esophageal Variceal Bleed (EVB) as EVL was superior to EIS.(25) Both transjugular intrahepatic portosystemic shunts (TIPS) and surgical derivative procedures are extremely effective controlling variceal bleeding in patients who fail to respond to initial pharmacological and endoscopic therapies. However the incidence of encephalopathy and mortality remains very high in shunt therapies.(26,27) Terlipressin a synthetic analogue of vasopressin with longer activity and fewer side effects. It reduces portal pressure and its effects are still significant 4 hours after administration.(28,29,30) Somatostatin and analogues such as Octreotide also cause splanchnic vasoconstriction at pharmacological doses.

VI. Conclusion

There is no significant change in different parameters between terlipressin and octreotide treated patients. Hence it is suggested from our study that terlipressin was noninferior to octreotide in its efficacy to control variceal bleed when used as adjuvant agent in combination with endoscopic band ligation in patients with esophageal variceal bleed.

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