



CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF  
**PHARMACEUTICAL SCIENCES**

<http://doi.org/10.5281/zenodo.2689045>

Available online at: <http://www.iajps.com>

Research Article

## A CROSS SECTIONAL STUDY TO DETERMINE THE EFFICACY OF OCTEORIDE IN UPPER GASTROINTESTINAL BLEEDING DUE TO LIVER CIRRHOSIS

<sup>1</sup>Dr. Younis Ahmad, <sup>2</sup>Dr. Syeda Arooj Fatima, <sup>3</sup>Dr. Kaleem Ullah

<sup>1</sup>House Officer in Benazir Bhutto Hospital, Rawalpindi, <sup>2,3</sup>House Officer in Allied Hospital, Faisalabad.

Article Received: March 2019

Accepted: April 2019

Published: May 2019

**Abstract:**

**Background:** Upper gastrointestinal bleeding is one of the important cause of mortality and morbidity globally. Two main causes of bleeding are variceal and non-variceal. In variceal bleeding the underlying cause is portal hypertension due to liver cirrhosis. Liver cirrhosis is chronic inflammatory process that causes liver necrosis, fibrosis and conversion of normal liver architecture into abnormal nodule formation. In western world, alcoholic liver disease is most common cause of liver cirrhosis but in our country the most common cause is viral hepatitis. Endoscopy is the gold standard treatment procedure for upper gastrointestinal bleeding. Octreotide play important role in variceal bleed.

**Objective:** The aim of our study is to determine the efficacy of octreotide in upper gastrointestinal bleeding in patients waiting for endoscopy.

**Methodology:** Study design is case series. 62 patients were enrolled through non probability sampling technique. Patients presented in emergency with upper gastrointestinal bleeding due to liver cirrhosis, after taking detailed history and going through their previous investigations and medical record were enrolled in the study.

**Results:** Total 62 patients were enrolled in the study. 41 were male and 21 were female. Mean age was 48.4 +/- 7.9 SD. In comparison between Child-Pugh Class and age groups, in 20-35 years age group, 5 patients were from Child-Pugh Class A. 2 patients were in Child-Pugh Class B and 1 patient in Class C. In age group 36-50 years, 6 patients belong to Child-Pugh Class A, 9 patients were from Child-Pugh Class B and 10 patients were in Class C. In age group 51-65 years, 2 patients were in Child-Pugh Class A, 9 were in Class B and 18 patients were in Child-Pugh Class C. In 35 patients out of total 62 bleeding was successfully controlled with continues infusion of octreotide in 24 hours. In 14 patients bleeding remained continue and in 13 patients there was episode of re-bleeding observed after 48 hours. In relation to Child-Pugh Class A, in 10 patients bleeding remained control, in 2 patients bleeding continued after 24 hours and 1 patient developed episode of re-bleeding. According to child-pugh class B, in 13 patients bleeding remained control, in 5 patients bleeding continued after 24 hours and 2 patients developed episode of re-bleeding. In child-pugh class C, 10 patients had re-bleeding. Out of 62 patients 4 patient died. Out of 4 patients, 3 belong to Child-Pugh Class C and 1 from Class B.

**Conclusion:** Octreotide appears to have good efficacy in patient of upper gastrointestinal bleeding due to liver cirrhosis, especially in Child-pugh class A. It is also a better option in patients waiting for endoscopy.

**Key words:** Upper gastrointestinal (GI) bleeding, Octreotide, Efficacy, Cirrhosis, Endoscopy.

**Corresponding author:**

**Dr. Younis Ahmad,**

House Officer in Benazir Bhutto Hospital,

Rawalpindi, Pakistan

Email: [Chaoticdemon@gmail.com](mailto:Chaoticdemon@gmail.com)

QR code



Please cite this article in press Younis Ahmad et al., A Cross Sectional Study to Determine the Efficacy of Octeorida in Upper Gastrointestinal Bleeding Due To Liver Cirrhosis., Indo Am. J. P. Sci, 2019; 06(05).

**INTRODUCTION:**

Upper gastrointestinal is a life threatening condition present in emergency. Two most common causes are peptic ulcer and portal hypertension due to liver cirrhosis. Liver cirrhosis is an irreversible process, characterized by liver necrosis, fibrosis and conversion of normal liver architecture into abnormal nodule formation. Due to this process vascular arrangement disturbs leading to portal hypertension which ultimately results in variceal bleeding. Liver cirrhosis is ranked 10th leading cause of mortality each year in USA [1]. There are many causes of cirrhosis of liver e.g. viral hepatitis, alcoholic liver disease, autoimmune hepatitis, sclerosing cholangitis, primary biliary cirrhosis, Wilson disease and hemochromatosis etc. in western countries alcoholic liver disease is most common cause and viral infection like hepatitis B and C are more common causes in developing countries including Pakistan [2]. Liver cirrhosis has many complications but portal hypertension induced variceal bleeding is major one that leads to life threatening condition. Varices are observed in around 30% of patients with compensated and 60% patients with de-compensated liver cirrhosis [3,4]. According to some studies about 80-90% variceal bleed is associated with mortality rate with upto 30% initial episode are life threatening [5]. Endoscopic intervention is the mainstay of treatment but it is not available everywhere and expert hand is always needed. In our set up due to lack of facilities and over burden of patients endoscopy is usually done on 3-4 day of admission. That's the point where medical management is needed. Some studies has revealed that almost 70-80% of cases with variceal bleeding responds to medical therapy [6,7]. Medical management is considered in the form of supportive therapy, blood and its product replacement, proton pump inhibitors,

terlipressin, vasopressin and octreotide that have various degree of success. The aim of this study is to discuss pharmacological treatment for a patient waiting for endoscopy. In our hospital octreotide is freely available to patients and we have studied its efficacy in patients with variceal bleeding.

**MATERIALS AND METHODOLOGY:**

Study design is case series done at Department of Medicine, DHQ Hospital, Sargodha from duration of December 2018 to February 2019. Informed consent was taken from all the patients included in the study. Non-probability consecutive sampling technique was used. In this study patient presented with upper gastrointestinal bleeding due to liver cirrhosis and esophageal varices assessed by history and medical record and had diagnosed previously on endoscopy were enrolled. Age of the patients was 20-65 years. The patient with history of bleeding disorders, taking NSAIDs for long time, having hypersensitivity to octreotide, not giving consent and with massive bleeding were excluded from the study. The diagnosis of liver cirrhosis was made on clinical, ultrasound and laboratory data and the cases were divided into 3 groups of Child-Pugh Class A, B and C. The octreotide was injected initially 50mcg bolus followed by continues infusion at the rate of 45-50mcg per hour. The infusion continued for 2-5 days until patient under-went endoscopy. Endoscopy was done in every patient within 2-5 days of admission. Patient had hourly monitoring of pulse rate, blood pressure, hematemesis and melena. The efficacy was labelled as Bleeding stopped, bleeding continued and re-bleeding. Control of bleeding was established by stable pulse rate and blood pressure, no fresh episode of melena and hematemesis, and no blood found in nasogastric tube during gastric lavage

Bleeding controlled	No signs of active bleeding after 24 hours
Bleeding continued	Hematemesis or melena continued after 24 hours
Re-bleeding	If a patient starts bleeding after 48 hours of "controlled bleeding"

Total 62 patients were enrolled in the study. 41 (66.12%) patients were male and 21 (33.87%) were female. Mean age was 48.4 +/- 7.9 SD (standard deviation). According to Child-Pugh Class, out of 62 patients, 13 were in Child-Pugh Class A, 20 patients in Child-Pugh Class B and remaining 29 were from Child-Pugh Class C. According to different age groups, 8 patients belonged to age group 20-35 years,

25 patients were from 36-50 years age group and 29 patients were lie in 51-65 years. In comparison between Child-Pugh Class and age groups, out of 8 patients of 20-35 years of age, 5 patients were from Child-Pugh Class A. 2 patients were in Child-Pugh Class B and 1 patient in Class C. In age group 36-50 years, 6 patients belong to Child-Pugh Class A, 9 patients were from Child-Pugh Class B and 10

patients were in Class C. In age group 51-65 years, 2 patients were in Child-Pugh Class A, 9 were in Class B and 18 patients were in Child-Pugh Class C.

Efficacy of Octreotide was shown in the form of “bleeding controlled”, “bleeding continued” and “re-bleeding”. In 35 (56.45%) patients out of total 62 bleeding was successfully controlled with continues infusion of octreotide in 24 hours duration. In 14 (22.58%) patients bleeding remained continue and in 13 patients there was episode of re-bleeding observed after 48 hours. In relation to Child-Pugh Class A, in 10 patients bleeding remained control, in 2 patients bleeding continued after 24 hours and 1 patient

developed episode of re-bleeding. According to child-pugh class B, in 13 patients bleeding remained control, in 5 patients bleeding continued after 24 hours and 2 patients developed episode of re-bleeding. In child-pugh class C, 10 patients had re-bleeding. Out of 62 patients 4 patient died. Out of 4 patients, 3 belong to Child-Pugh Class C and 1 from Class B.

**Table 2:** Child-Pugh Class distribution among 62 patients

Child-Pugh Class A	13(20.9%) patients
Child-Pugh Class B	20 (32%) patients
Child-Pugh Class C	29 (46.7%) patients

**Table 4:** Efficacy of octreotide in different age groups

Age group	Bleeding Controlled	Bleeding Continued	Re-bleeding
20-35 years	7	0	1
36-50 years	18	5	2
51-65 years	10	9	10
<b>Total</b>	<b>35</b>	<b>14</b>	<b>13</b>

**Table 3:** Age groups vs. Child-Pugh Class

Age group	Class A	Class B	Class C	Total
20-35 years	5	2	1	8
36-50 years	6	9	10	25
51-65 years	2	9	18	29
<b>Total</b>	<b>13</b>	<b>20</b>	<b>29</b>	<b>62</b>

## DISCUSSION:

Upper gastrointestinal bleeding is a life threatening emergency and it needs urgent intervention to avoid mortality. Octreotide is one of the commonest used agent for variceal bleeding. It is a synthetic somatostatin analogue that has role in reducing splanchnic blood flow. It is a direct splanchnic vasoconstrictor. It has minimal side effects and better safety profile than vasopressin. Octreotide also lowers gastric mucosal blood flow in normal and portal hypertensive stomach. It plays important role in inhibition of both pepsin and acid secretion and prevents dissolution of clot at the site of bleeding [9,10]. It is also effective in portal hypertensive gastropathy. In some studies it also played effective

role in the management of non-variceal bleeding [11,12].

In a study done by Baik et.al and Badaruddin AH et.al. Hemostasis achieved more frequent with octreotide than terlipressin[13,14]. In a comparative study between octreotide and vasopressin showed control of bleeding 88% and 54% respectively [15,16]. Corley DA et.al. Found octreotide has better control of re-bleeding than vasopressin and terlipressin. A multicenter randomized trail conducted in France showed that control of bleeding with octreotide is 79% and terlipressin 59% [17-21]. But there are several studies that showed that there is no significant difference in the efficacy of different

treatment.

This study favors that octreotide play a handsome role in controlling upper gastrointestinal bleeding in cirrhotic patient, especially in patient with Child Pugh class A. Endoscopy is the gold standard treatment for upper gastrointestinal bleeding but in our set up due to over burden of patients and lack of emergency endoscopic procedures and skilled hand, patient had to wait for 3-5 days for his turn. In such patients, octreotide play important role for control of bleeding, until the endoscopy is performed.

### CONCLUSION:

Octreotide has good efficacy in treating upper gastrointestinal bleeding in cases with liver cirrhosis and this is significantly better in cases with Child Pugh Class A.

### REFERENCES:

1. Tierney LM, McPhee SJ, Papadakis MA, editors. Current Medical Diagnosis and Treatment. 45th ed. San Francisco: Lange, 2006. Azer SA. Esophageal Varices. [online] last updated on 2006 [cited 2007 March 15]. Available from: URL: <http://www.emedicine.com/med/topic745.htm>.
2. Brouwers MC, Kho ME, Browman GP, et al. AGREE II: advancing guideline development, reporting and evaluation in health care. CMAJ 2010;182:E839-42.
3. Jairath V, Rehal S, Logan R, et al. Acute variceal haemorrhage in the United Kingdom: patient characteristics, management and outcomes in a nationwide audit. Dig Liver Dis 2014;46:419-26.
4. Azer SA. Esophageal Varices. [online] last updated on 2006 [cited 2007 March 15]. Available from: URL: <http://www.emedicine.com/med/topic745.htm>.
5. Sharara AI, Rockey DC. Gastroesophageal variceal hemorrhage. N Engl J Med 2001; 345(9):669-81.
6. Walker S, Kreichgauer HP, Bode JC. Terlipressin vs. somatostatin in bleeding esophageal varices: a controlled, double-blind study. Hepatology 1992;15:1023-30.
7. Pedretti G, Elia G, Calzetti C, Magnani G, Fiacadorri F. Octreotide versus terlipressin in acute variceal hemorrhage in liver cirrhosis. Emergency control and prevention of early rebleeding. Clin Invest 1994;72:653-59.
8. Feu F, Ruiz del Arbol L, Banares R, Planas R, Bosch J. Double-blind randomized controlled trial comparing terlipressin and somatostatin for acute variceal hemorrhage. Gastroenterology 1996;111:1291-99.
9. Zhou Y, Qiao L, Wu J, Hu H, Xu C: Comparison of the efficacy of octreotide, vasopressin, and omeprazole in the control of acute bleeding in patients with portal hypertensive gastropathy: a controlled study. J Gastroenterol Hepatol 2002, 17:973-979.
10. Walker S, Kreichgauer HP, Bode JC. Terlipressin (glypressin) versus somatostatin in the treatment of bleeding esophageal varices-final report of a placebo-controlled, double-blind study. Zeitschrift für Gastroenterologie 1996;34:692-98.
11. Clarke DL, McKune A, Thomson SR: Octreotide lowers gastric mucosal blood flow in normal and portal hypertensive stomachs. Surg Endosc 2003, 17:1570-1572.
12. Sgouros SN, Bergele C, Viazis N, Avgerinos A: Somatostatin and its analogues in peptic ulcer bleeding: facts and pathophysiological aspects. Dig Liver Dis 2006, 38:143-148.
13. Baik SK, Jeong PH, Ji SW, Yoo BS, Kim HS, Lee DK, et al. Acute hemodynamic effects of octreotide and terlipressin in patients with cirrhosis: a randomised comparison. Am J Gastroenterol 2005;100:631-35.
14. Badruddin AH, Rasool G, Chaudry MA. Hemodynamic effects of Terlipressin in patients with bleeding esophageal varices secondary to cirrhosis of liver. J Coll Physicians Surg Pak. Dec 2006;16(12):755-59
15. Corley DA, Cello JP, Adkisson W, Ko WF, Kerlikowske K. Octreotide for acute esophageal variceal bleeding: a meta-analysis. Gastroenterology. 2001 Mar;120:946-54.
16. Netzer P, Gaia C, Sandoz M, et al. Effect of repeated injection and continuous infusion of omeprazole and ranitidine on intragastric pH over 72 hours. Am J Gastroenterol. 1999;94:351-7.
17. Labenz J, Peitz U, Leusing C, et al. Efficacy of primed infusions with high dose ranitidine and omeprazole to maintain high intragastric pH in patients with peptic ulcer bleeding: a randomized controlled study. Gut. 1997;40:36-41.
18. Lau JY, Sung JJ, Lee KK, et al. Effect of intravenous omeprazole on recurrent bleeding after endoscopic treatment of bleeding peptic ulcers. N Engl J Med. 2000;343:310-6.
19. Andriulli A, Loperfido S, Focareta R, et al. High- versus low-dose proton pump inhibitors after endoscopic hemostasis in patients with peptic ulcer bleeding: a multicentre, randomized study. Am J Gastroenterol. 2008;103:3011-18.
20. Hwang SJ, Lin HC, Chang CF, et al. A randomized controlled trial comparing octreotide and vasopressin in the control of acute esophageal variceal bleeding. J Hepatol. 1992;16:320-5.