Sial Journal of Medical Sciences
ISSN Online: 2959-6939
ISSN Print: 2959-6920
Vol. 3, Issue 2, 2024

ORIGINAL ARTICLE

A Retrospective Study to Findout the Number of Sessions Required to Regress Esophageal Varices Completely

Muhammad Awais Saleh

Affiliations
Assistant Professor of Medicine, Govt. Khawaja M. Safdar Medical College, Sialkot.
0321-4463630

Corresponding Author:
Assistant Professor of Medicine, Govt. Khawaja M. Safdar Medical College, Sialkot.
awaissaleh@gmail.com
Contact # 0321-4463630

Submission complete: Sept. 2024
Review began: Nov., 2024
Review ended; Nov, 2024,
Acceptance: Nov, 2024
Published: Dec, 2024

Author contribution:
MAS; Conceptualization of project, data collection, literature search, writing manuscript, statistical analysis, drafting, revision and final approval.

ABSTRACT

Objective: To determine the number of sessions required to regress the esophageal varices completely.

Methodology: Retrospective study was conducted during 31st Jan, 2023 to 31st Dec, 2023 with sample size of 110 patients with mean age of 50 years.

Result: Total of 110 patients were included in this study. Out of 110 patients, 42 were females and 68 were males. All patients with esophageal varices had EVBL performed. Out of the total patients, around 32% required one session while 4% patient required seven sessions. In the first session, 12.9% got 4 bands. In the second session, 4.9% got 5 bands. In the third session, 5.4% got 4 bands. In the fourth session, 4% got 4 bands. In the fifth session, 2.2% got 5 bands. In the sixth and seventh sessions, 0.4% patient got 5 bands per session.

Conclusion: EVBL (Esophageal Variceal Band Ligation) is a safe and well –tolerated method among patients. The average number of sessions required for the complete regression of esophageal varices is 4 to 5 bands with a period of almost 3 weeks between the consecutive sessions.

Keywords: Esophageal Varices, Portal Hypertension, Liver Cirrhosis, Esophageal Varices Band Ligation, Hemorrhage.

Cite this Article as: *Saleh M.A.,; A Retrospective Study to Find out the Number of Sessions Required to Completely Regress Esophageal Varices. SIAL J Med. Sci. Dec-2024 V-3 (Issue-10):36-41*

Introduction

Esophageal varices are the enlargement of the submucosal veins in the esophagus, which connect portal and systemic circulation. The main cause of esophageal varices is portal hypertension, and its major cause is liver cirrhosis which leads to the destruction of liver parenchyma.[1] The development of regenerating nodules in the liver surrounded by fibrous bands as a result of persistent liver damage is known as cirrhosis. The main causes of liver cirrhosis are alcoholism, fatty liver disease, autoimmune damage and viral infections. It is more common in overweight people and old age. As in liver cirrhosis, obstruction to the blood flow occurs due to scarring which leads to the pooling of blood and increased pressure in large veins called portal hypertension. Liver cirrhosis can also develop into decompensated liver disease, which can cause the patient to die and show up as hepatic encephalopathy, hepatorenal syndrome, jaundice, ascites and the variceal hemorrhage. But when portal pressure due to

ISSN Online: 2959-6939
ISSN Print: 2959-6920
Vol. 3, Issue 2, 2024

liver cirrhosis raises above 10 mmHg, it causes the opening of collateral supply of esophagus.[2] The more the portal pressure increases, the more the bleeding occurs and the more difficult it will be to stop the bleeding and treat esophageal varices. One frequent side effect of portal hypertension in cirrhosis patients is esophageal varices. The degree of liver dysfunction is probably linked to the rates at which esophageal varices develop and grow, and once they do, they enlarge[3]. According to reports, the likelihood of esophageal varices in individuals with CTP-A, CTP-B, and CTP-C cirrhosis is 42%, 71%, and 76%, respectively[4]. Small and big varices have a 5% and 15% annual risk of bleeding, respectively. Even though it's a good preventive treatment, over half of patients with cirrhosis prior to transplant experience acute variceal hemorrhage, and each bleeding episode has a 10–20% death rate[5,6]. Esophageal varices can be treated by sclerotherapy in which sclerosant is injected to shrink the vessels but the superior method to treat esophageal varices is esophageal varices band ligation.[7] In esophageal varices band ligation, elastic bands are used to tie up the ends of varices by sucking them into the chamber at the end of the endoscope, to reduce the risk of bleeding from esophageal varices and to prevent hemorrhages. This method is significant as it has fewer complications and low chances of re-bleeding[8]. Vasoactive medication therapy should be started in order to reduce portal pressure, according to current standards. Vasoactive medications have been associated to a lower failure to control bleeding and a lower death rate because they require fewer transfusions.[9] Although experts concur that vasoactive drugs should be started before to endoscopy, there is still debate on the best course of treatment; current recommend-ations include 48–72 hours or 5 days of therapy [5,10,11]. Patient compliance and cost are crucial. While some studies execute EVBL in a week, others have shown that a minimum of one month must pass between banding procedures. Furthermore, there is insufficient information on how many sessions are necessary to completely eradicate variceal eradication in Pakistan.[12,13].

The average time for resolution of large esophageal varices (those at risk of bleeding, often classified as Grade II or III varices) varies based on several factors, including the treatment method, patient health status, and follow-up care. Here's an overview based on current medical data and research:

1. Endoscopic Variceal Ligation (EVL)

- Resolution Time: Studies suggest that with regular endoscopic variceal ligation sessions, large esophageal varices can be reduced or resolved in 3 to 6 months on average.
- Follow-Up: Typically, EVL sessions are performed every 1 to 4 weeks until the varices are eradicated, with follow-up endoscopies every 6 to 12 months to monitor for recurrence.

2. Non-Selective Beta-Blockers (NSBB)

- Resolution Time: Non-selective beta-blockers, such as propranolol or nadolol, may reduce the pressure in the portal venous system, potentially helping to prevent variceal progression. However, they are less effective at rapidly shrinking large varices compared to EVL.
- Outcome: Beta-blockers are primarily preventive, so large varices may still take

several months to a year to reduce in size. Beta-blockers are often used in combination with EVL for best results.

3. Endoscopic Sclerotherapy

- Resolution Time: Endoscopic sclerotherapy is less commonly used now due to side effects, but when used, it generally requires multiple sessions and can achieve variceal obliteration in several weeks to a few months. The number of sessions needed varies based on the varix size and location.

4.Transjugular Intrahepatic Portosystemic Shunt (TIPS)

- Resolution Time: TIPS is often reserved for patients who have recurrent bleeding or are at high risk for rebleeding and may not have a direct goal of resolving varices. However, by reducing portal hypertension, TIPS can cause large varices to regress within a few months.
- Usage: TIPS is typically considered a bridge to liver transplantation or for patients unresponsive to other treatments.

5. Natural History without Treatment

- Without any treatment, large esophageal varices have a high risk of progressing or bleeding within 1 to 2 years in patients with cirrhosis and portal hypertension.
- Mortality Risk: Large varices have a high mortality risk due to bleeding, so regular monitoring and intervention are critical.

Summary of Resolution Times by Treatment

- TreatmentAverage, Resolution Time
- EVL 3–6 months
- NSBB (e.g., propranolol) 6–12 months (preventive)
- Endoscopic Sclerotherapy , Weeks to months
- TIPS, Few months

These timelines are general and can vary significantly. Each patient's response depends on liver function, portal pressure, overall health, and adherence to treatment protocols. Regular follow-ups with the endoscopic evaluations are essential to the monitor progress and adjust the treatment plan as needed.

For the most current and specific guidance, medical professionals refer to resources like the American Association for the Study of Liver Diseases (AASLD) guidelines and recent articles in journals such as Hepatology and Gastroenterology.

Objectives

To determine certain number of sessions required to completely regress the esophageal varices.

Methodology:

This is a retrospective longitudinal multi-center study conducted by the Gastroenterology section of the Department of Medicine at Allama Iqbal Memorial Teaching Hospital, Sialkot. The study duration was from 31st Jan, 2023 to 31st Dec, 2023 and the sample size was 110 patients. The inclusion criteria was the age of the patients from 30 years to 70 years of both sexes. Band ligation and follow-up endoscopy were used in the endoscopic treatment of several esophageal varices until the varices were completely eradicated. Rubber elastic bands were applied to the esophageal varices during the EVBL treatment. The Baveno VI consensus's suggested study guidelines served as the basis for the nomenclature and variable selection.[14] The data gathered remained confidential. The data was analyzed by SPSS software 2024.

Sial Journal of Medical Sciences
ISSN Online: 2959-6939
ISSN Print: 2959-6920
Vol. 3, Issue 2, 2024

Result

Almost 110 patients were studied in this reserach. Out of the 110 patients, the average age of the patients was 50 years old. Out of the total of the patients, 38.2% were females and 61.6% were males (Figure 1).

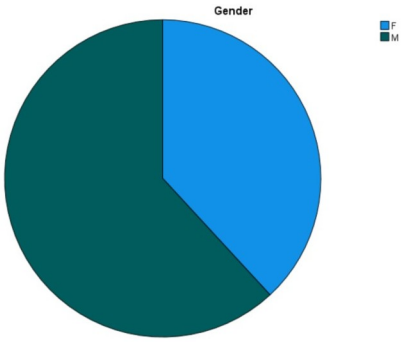

Figure 1: The percentage (%age) of gender involved in the study

Out of the total patients, around 32% of the patients (73 patients) required one session and 4% of the patients (1 patient) required 7 sessions, so most patients were able to take one session for their varices. The results are summarized in Fig # 2.

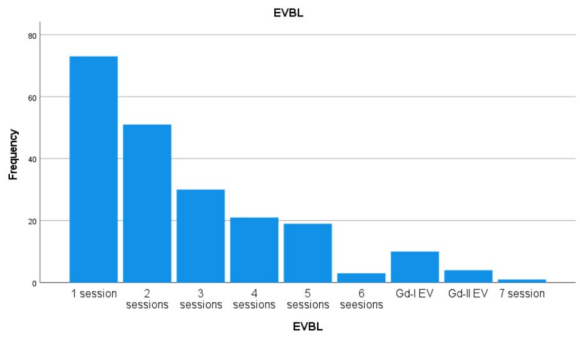

Figure 2: The frequency of the number of sessions required

In the first session, 12.9% got 4 bands. In the second session, 4.9% got 5 bands. In the third session, 5.4% got 4 bands. In the fourth session, 4% got 4 bands. In the fifth session, 2.2% got 4 bands. In the sixth and seventh sessions, 0.4% got 5 bands each so most of the patients got 5 bands per session. The results are summarized in Table 1.

No. of sessions	No. of bands required	Frequency	Percentage
1	4-5	29	12.9%
2	5	11	4.9%
3	4	12	5.4%
4	4	9	4%
5	5	5	2.2%
6	5	1	0.4%
7	5	1	0.4%

Table 1: The frequency and percentage of the number of bands required in each session

Discussion:

This study demonstrated how many EVBL treatments are necessary for the full regression of esophageal varices. For esophageal varices, EVBL is thought to be the best endoscopic procedure. According to recent research, band ligation sessions ought to continue until the esophageal varices are totally eradicated.

Varices that have disappeared or are unable for the ligator to grip and band are typically regarded as eliminated.[15] Our study indicated that the average number of sessions needed to constrict the varices was four to five, which differs slightly from earlier banding research. The age category of the 50% patients in the prior trial was not specified.[16] while this research was on about 110 patients with an age group range from 30-70 years which made it more reliable than the previous research. The other methods used for the treatment of varices have a low success rate

as there are chances of recurrence of hemorrhage after the procedure. Banding is safer because it regresses the varices and has fewer complications after the procedure. Within this region, only one or two studies were conducted to evaluate the quantity of sessions and the time between each session needed for the complete eradication for esophageal varices. To accomplish variceal elimination, our study's sessions had been set at three-week intervals. In light of the rate at which the varices recur, a research by Yoshida et al. recommended that esophageal band ligation be done every two months as opposed to every two weeks.[17]

Another research done in Morocco, on the treatment procedure of varices with a time interval of a mean of 14 weeks showed that the rebleeding rate of patients taking esophageal band ligation therapy can be reduced if the sessions are done within a short period.[18]

Another study showed that the reason why almost 3 weeks is chosen for the next session is that the patient may lose track of their follow-ups if there is a gap of months between sessions and if it is performed weekly, patient may experience discomfort. Moreover, obliteration of the varices was mostly achieved after the first session. The reason for that is the impromptu decrease in portal hypertension which appeared to happen in almost 30% out of all the patients handled with band ligation.[19,20] So, EVBL alone is better for the treatment of varices as it is well tolerated among patients and improves their compliance.

Conclusion:

EVBL is a safe and easily bearable procedure among patients. The average sessions required for the regression of varices is 4 to 5 sessions with a time interval of almost three weeks between the consecutive sessions.

Budget: Nil
Disclaimer: None
Conflict of Interest: None
Source of Funding: None

References:

1. 1.Kim YJ, Raman SS, Yu NC, To'o KJ, Jutabha R, Lu DSK. Esophageal Varices in Cirrhotic Patients: Evaluation with Liver CT. Amer. J. of Roentgenology. 2007 Jan; 188(1):139–44.
2. Kumar, Vinay, Abul K. Abbas, and Jon C. Aster, eds. Chapter. 17. Robbins Basic Pathology. Pg. 1466. 10th ed. Philadelphia: Elsevier, 2018.
3. de Franchis R, Primignani M. Natural History of Portal Hypertension in Patients with Cirrhosis. Clinics in Liver Disease 2001;5(3):645–663.
4. Kovalak M, Lake J, Mattek N, Eisen G, Lieberman D, Zaman A. Endoscopic screening for varices in cirrhotic patients: data from a national endoscopic database. Gastrointest Endosc 2007;65(1):82–88
5. Garcia-Tsao G, Abraldes JG, Berzigotti A, Bosch J. Portal hypertensive bleeding in cirrhosis: Risk stratification, diagnosis, and management: 2016 practice guidance by the American Association for the study of liver diseases. Hepatology 2017;65 (1) :310–335
6. Reverter E, Tandon P, Augustin S, et al. A MELD-based model to determine the risk of mortality among patients with acute variceal bleeding. Gastroenterology 2014; 146(2):412–419 e413.
7. Maric L, Alonso Y, Alvarez A, Erim T. Endoscopic Variceal Band Ligation Leading to Acute Onset Dysphagia: 1508. Official journal of the American College

of Gastroenterology | ACG. 2016 Oct 1 [cited 2024 May 29];111:S692.

8. Aggelopoulou I, Konstantakis C, Manolopoulos S, Triantos C. Role of band ligation for secondary prophylaxis of variceal bleeding. World Journal of Gastroenterology. 2018 Jul 14;24 (26): 2902–14.
9. Wells M, Chande N, Adams P, et al. Meta-analysis: vasoactive medications for the management of acute variceal bleeds. Aliment Pharmacol Ther 2012;35(11): 1267–1278.
10. de Franchis R, Baveno VIF. Expanding consensus in portal hypertension: Report of the Baveno VI Consensus Workshop: Stratifying risk and individualizing care for portal hypertension. J Hepatol 2015;63(3):743–752.
11. European Association for the Study of the Liver. Electronic address, European Association for the Study of the L. EASL Clinical Practice Guidelines for the management of patients with decom-pensated cirrhosis. J Hepatol 2018;69(2): 406–460.
12. Ligation versus propranolol for the primary prophylaxis of variceal bleeding in cirrhosis. Schepke M, Kleber G, Nurnberg D, et al. Hepatology. 2004;40: 65–72.
13. Revising consensus in portal hypertension: report of the Baveno V consensus workshop on methodology of diagnosis and therapy in portal hypertension. De Franchis R. J Hepatol. 2010;53:762–728.
14. The Baveno VI criteria for predicting esophageal varices: validation in real life practice. Sousa M, Fernandes S, Proença L, et al. Rev Esp Enferm Dig. 2017;109 :704– 707.
15. Current endoscopic therapy of variceal bleeding. Villanueva C, Aracil C, Colomo A, Guarner C. Best Pract Res Clin Gastroenterol. 2008;22:261–278.
16. Butt N,Abbasi A, Ali Khan M, Butt S, Ahmed SM. Esophageal Variceal Band Ligation Interval and Number Required for the Obliteration of Varices: A Multi-center Study from Karachi, Pakistan. Cureus. 2019 June 25.
17. A randomized control trial of bimonthly versus biweekly endoscopic variceal ligation of esophageal varices ligation performed bi-weekly versus bi-monthly. Yoshida H, Mamada Y, Taniai N, et al. Am J Gastroenterol. 2005;100:2005–2009.
18. Villanueva C, Colomo A, Aracil C, Guarner C. Current endoscopic therapy of variceal bleeding. Best Practice and Research Clinical Gastroenterology. 2008 Apr;22[2] : 261-78.
19. Maintenance of hemodynamic response to treatment for portal hypertension and influence on complications of cirrhosis. Villanueva C, López-Balague JM, Aracil C, et al.. J Hepatol. 2004;40:757–765.
20. Endoscopic management of esophageal varices. Cordon JP, Torres CF, García AB, Rodriguez FG, Manuel Suárez de Parga Jm. World J Gastrointest Endosc. 2012;4:312– 322.