

## Endoscopic Variceal Obliteration (EVO) versus Endoscopic Variceal Band Ligation (EVL) in Patients with Acute Gastro Osophageal Varices-1 (GOV-1) Bleeding

Mohamed Abd El-Rasheed<sup>1</sup> and Mohamed Salah<sup>2</sup>

<sup>1</sup>Tropical Medicine Department, Faculty of Medicine, Al-Azhar University, Egypt.

<sup>2</sup>Internal Medicine Department, Faculty of Medicine, Al-Azhar University, Egypt.

[m-allam74@hotmail.com](mailto:m-allam74@hotmail.com)

**Abstract: Background:** Gastric variceal bleeding is an important cause of gastrointestinal bleeding in patients with portal hypertension. Gastric variceal bleeding is less common than esophageal variceal bleeding, but bleeding from gastric varices is more severe and more difficult to treat. **Aim:** To compare endoscopic band ligation versus tissue adhesive glue for treatment of gastro-osophageal varices-1 (GOV-1) bleeding, as regard the success of haemostasis and rate of rebleeding. **Methods:** Between October 2013 and September 2014 at Al-Hussien University Hospital, a total of 35 patients with acute gastric varices (GOV-1) bleeding were endoscopically treated (23 patients received Histoacryl® injections and 12 patients underwent endoscopic band ligation). **Results:-** Patients of the two groups had no significant differences as regard, age and sex variation, clinical presentation, laboratory images findings, Child classification or endoscopic morphological grades of GV. Five patients were complicated; 3 cases of post-procedure fever (2 of EVO-group and 1 of EVL-group) as well as 1 case of chest infection (EVO-group) and 1 patient with tearing retrosternal pain with free ECG (EVL-group), with no statistically significant differences between the two groups. Rebleeding rates of 13% (3/23) in EVO-group versus 16.6% (2/12) in EVL-group, with no significant differences. **Conclusion:** Endoscopic variceal ligation could be used in treatment of gastro-esophageal varices-1 bleeding with the same results of Histoacryl injections as regard the success of haemostasis and rate of rebleeding. [Mohamed Abd El-Rasheed and Mohamed Salah. **Endoscopic Variceal Obliteration (EVO) versus Endoscopic Variceal Band Ligation (EVL) in Patients with Acute Gastro Osophageal Varices-1 (GOV-1) Bleeding.** *Nat Sci* 2015;13(5):172-174]. (ISSN: 1545-0740). <http://www.sciencepub.net/nature>. 23

**Keywords:** Endoscopic Variceal Obliteration (EVO), Endoscopic Variceal Band Ligation (EVL) and Acute Gastro Osophageal Varices-1 (GOV-1)

### 1. Introduction:-

Bleeding from esophageal varices (EVs) or gastric varices (GVs) is a catastrophic complication of chronic liver disease. Gastric varices classified as short gastro-esophageal varices (GOV-1) or esophageal varix extending down to the cardia or lesser curve (GOV-2). Isolated gastric varices (IGV) may be located either in the fundus (IGV-1) or elsewhere in the stomach (IGV-2) (*Sarin and Kumar, 1989*).

Gastric variceal bleeding is less common than esophageal variceal bleeding, but bleeding from gastric varices is more severe and more difficult to treat. Furthermore, gastric variceal bleeding results in higher morbidity and mortality than esophageal variceal bleeding (*Arakawa et al., 2002*).

A number of treatment modalities for acute gastric variceal bleeding and prevention of bleeding are available. These include endoscopic treatment or TIPS (transjugular intrahepatic portosystemic shunt) (*Laine et al., 2006*).

Two endoscopic techniques are used: endoscopic injection sclerotherapy (EIS) and endoscopic variceal ligation (EVL). Because endoscopic variceal ligation (EVL) and endoscopic variceal obliteration (EVO) are readily available and

inexpensive, these procedures have been successfully used in many centers for the treatment of acute gastric variceal bleeding (*Tan et al., 2006*).

### 2. Patient and methods:-

From patients of active upper GIT bleeding admitted at Al-Hussien University Hospital between October 2013 and September 2014, only 35 patients were found to have acute gastric varices (GOV-1) bleeding.

For all patients, clinical assessment, laboratory tests including CBC, liver function tests, renal function tests, Child-Pugh score and endoscopic examination were done. Vitally unstable patients were managed firstly by rescue therapies ; vasoactive drug (octreotide) and antibiotic prophylaxis was given.

Randomly, 23 patients were treated with Histoacryl® endoscopic variceal obliteration (EVO-group) and 12 patients underwent endoscopic variceal band ligation (EVL-group).

During endoscopic procedure, active bleeding was defined as spurting or oozing of blood from a GV. Gastro osophageal varices-1 was defined as a continuation of esophageal varices extending for 2 to

5 cm below the gastroesophageal junction (**Sarin and Kumar, 1989**).

Successful hemostasis was defined as cessation of bleeding with no recurrence for 2 days. Rebleeding was defined as a new onset of hematemesis or melena after a 24-hour period of stable vital signs. (**D'Amico et al., 2003**)

### 3. Results:

The patients of the two group had no significant differences as regard, age and sex variation, clinical presentation, laboratory images findings, Child classification or endoscopic morphological grades of GV.

**Table 1: Post procedure complications**

Post-procedure	EVO-group (n:23)	EVL-group (n:12)	X <sup>2</sup>	P
Fever	2	1	0.0011	0.97338
Chest infection	1	-	0.5143	0.473289
Chest pain	-	1	1.8198	0.177339

From all treated patients 5 patients were complicated; 3 cases of post-procedure fever (2 of EVO-group and 1 of EVL-group), one case of chest infection (EVO-group) and one patient with tearing

retrosternal pain with normal ECG and cardiac enzymes (EVL-group). With no statistically significant differences between the two groups

**Table 2: Rebleeding rate**

Post-procedure	EVO-group(n:23)	EVL-group (n:12)	X <sup>2</sup>	P
Rebleeding	3 (13%)	2 (16%)	0.0628	0.802133

Hemostasis was achieved in all patients, with rebleeding rates of 13% (3/23) vs. 16% (2/12) in EVO-group versus EVL-group, respectively (P value 0.6339). Rebleeding cases were reported after 5 days in EVO-group versus 7 days in EVL-group.

### 4. Discussion:-

Since the gastric varices developed by portal hypertension were first reported by **Stadelman (1913)**, it has been considered as a serious problem clinically because there is no established non-invasive therapeutic method, in spite of its danger of possibly causing death by excessive bleeding.

In acute GOV-1 bleeding, there are limited data comparing EVL and EVO (**Lo et al., 2001**).

**Lee and Shih (2008)** stated that, Variceal ligation is effective for hemostasis of bleeding gastric varices. However, early rebleeding is still a problem and more often encountered with larger gastric varices.

In this study, no significant differences were detected between GEV1 patient treated with EVO or EVL as regard post procedure complications or rebleeding.

According to previous studies, EVL had complications including transient dysphagia, chest discomfort, superficial ulcers at the banding site,

bacteremia and infection (**Garcia-Pagán and Bosch, 2005**). EVO had minor complications such as chest pain, pleural effusion, dysphagia, and fever. Severe complications include deep ulcers through the gastric wall which predispose to hemorrhage, stricture formation, perforation, and embolism due to the sclerosing agent (**Peck-Radosavljevic et al., 2005**).

**Hyung et al., (2013)** studied 84 patients of GOV-1 (20 patients underwent EVL and 64 patients underwent EVO) from February 2004 to September 2011, and concluded that, EVL is a more effective treatment modality than EVO in the management of acute GOV-1 bleeding

**Min et al., (2011)** Concluded that, there were no significant differences in the time-to-rebleeding or survival time among EVO and EVL

So, endoscopic variceal ligation could be used in treatment of gastro-osophageal varices-1 bleeding with the same results of Histoacryl injections as regard the success of haemostasis and rate of rebleeding.

### References:

1. Arakawa M., Masuzaki T. and Okuda K. (2002): Pathomorphology of esophageal and gastric varices. *Semin Liver Dis.* 22:73–82.

2. D'Amico G, de Franchis R. (2003): Upper digestive bleeding in cirrhosis. Post-therapeutic outcome and prognostic indicators. *Hepatology*; 38:599–612.
3. Garcia-Pagan J. and Bosch J. (2005): Endoscopic band ligation in the treatment of portal hypertension. *Nat Clin Pract Gastroenterol Hepatol*. 2:526–535.
4. Hyoung J., Chung H., Du H. and Eun A. (2013): Comparison of Endoscopic Variceal Ligation and Endoscopic Variceal Obliteration in Patients with GOV-1 Bleeding. *Chonnam Med J*. 49(1): 14–19.
5. Laine L., Planas R., Nevens F., Banares R., Patch D. and Bosch J. (2006): Treatment of the acute bleeding episode. In:Franchis R., editors. *Consensus Workshop on Definitions, Methodology and Therapeutic Strategies*. Oxford: Blackwell Science; 217-242.
6. Lee T. and Shih L. (2008): Clinical experience of endoscopic banding ligation for bleeding gastric varices. *Hepatogastroenterology*. 55(82-83):766-9.
7. Lo G., Lai K., Cheng J., Chen M. and Chiang H. (2001): A prospective, randomized trial of butyl cyanoacrylate injection versus band ligation in the management of bleeding gastric varices. *Hepatology*. 33:1060–1064.
8. Min S., Kim S., Kim Y., Bae J., Lee J., Lee S. and Kim H. (2011): [Comparison among endoscopic variceal obliteration, endoscopic band ligation, and balloon-occluded retrograde transvenous obliteration for treatment of gastric variceal bleeding]. *Korean J Gastroenterol*. 25;57(5):302-8.
9. Peck-Radosavljevic M., Trauner M. and Schreiber F. (2005): Austrian Society of Gastroenterology and Hepatology Austrian consensus on the definition and treatment of portal hypertension and its complications. *Endoscopy*. 37:667–673.
10. Sarin S. and Kumar A. (1989): Gastric varices: profile, classification, and management. *Am J Gastroenterol*. 84:1244-1249.
11. Stadelmann E. (1913): About rare forms of bleeding in gastrointestinal tract. *Berl Klin Wochenschr*.50:825.
12. Tan P., Hou M., Lin H., Liu T., Lee F. and Chang F. (2006): A randomized trial of endoscopic treatment of acute gastric variceal hemorrhage: N-butyl-2-cyanoacrylate injection versus band ligation. *Hepatology*. 43:690–697.

5/21/2015