WORLD JOURNAL OF GASTROENTEROLOGY, HEPATOLOGY AND ENDOSCOPY

Gastric Varices Treatment: Is it Possible to Individualise Therapy for Bleeding Patients

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Article Information

Article Type: Short Review
Journal Type: Open Access
Volume: 3 Issue: 3
Manuscript ID: WJGHE-3-127
Publisher: Science World Publishing

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Citation:

Jamwal KD (2021). Gastric Varices Treatment: Is it Possible to Individualise Therapy for Bleeding Patients. World J Gastroenterol Hepatol Endosc. 3(3); 1-2

Recieved Date: 09 January 2021
Accepted Date: 29 January 2021
Published Date: 03 February 2021

REVIEW

Gastric Varices (GV) are present in 15-25% of cirrhotics with GOV1 and the primary gastric varices being the most common [1]. Gastric varices can also be present in patients with left sided portal hypertension. As compared to esophageal varices the incidence of gastric variceal bleeding is low (10-20%) and bleeding is not proportional to portal pressure as is noted in esophageal varices, with a re bleeding rate of 30% in GV [2,3]. The GV bleeding is difficult to control due to presence of a thick mucosal layer over the GV, which does not collapse after bleeding. With the advent of hemo dynamic studies in GV, there has been change in approach to management of GV. Recently there has been increased focus on individualised GV treatment based on hemo dynamics of the portal system, especially on the left sided venous diseases (GV, ectopic varices, lieno renal shunt) and not on traditionally based endoscopic appearance as is done in most of the cases worldwide. With a contrast CT scan of the portal venous system, it is easy to delineate the anatomy prior to planning a definitive treatment (either primary or secondary). At present the standard treatment for GV is endoscopic glue injection (EGI) by an endoscopist and BRTO (balloon retrograde trans venous obliteration) via intervention radiologist [4-8]. Technically BRTO seems more complete when compared to an EGI, because the whole shunt which drains the GV is taken care of by the BRTO procedure. Whereas in the EGI procedure, only the mucosal varices are treated and the remaining sub mucosal varices, the shunt and the draining pathways (both afferent and efferent) are left untreated. An endoscopic ultrasound (EUS) is a much superior modality of managing vascular disorders such as GV, a. it has col our doppler b. it can differentiate between an artery & a vein c. it can assess shunts & collaterals d. it can assess completion of therapy [9,10]. EUS has been used for treatment of GV from the last decade and it has shown to be technically superior, safe and also it decreases overall cost, number of sessions and morbidity related to re bleeding in GV. With the advent of better diagnostic imaging of the portal venous anatomy such as CT/ MR venography the venous drainage and collaterals can be delineated in patients with GV, this knowledge of the anatomy when combined treatment modalities such as EGI, BRTO or EUS guided vascular treatment helps in individualising the therapy for the patients with GV.

In patients of GV with significant collaterals and shunts on the left side of mid line such as (afferent collaterals- posterior gastric vein, short

gastric veins or anterior gastric veins, efferent collaterals- lieno renal shunts) will benefit more with BRTO, EUS guided treatment and an EGI. In patients who have excessive collaterals or shunts on imaging, an EGI as the first modality of therapy should not be encouraged as these patients are those who develop systemic embolisation after glue injection due to presence of shunts. For such patients either a BRTO (in case of very large lieno renal shunt >10 mm) or an EUS guided angiotherapy should be advised and attempted (Table 1).

Table 1: Hemodynamic Classification of Gastric varices and treatment modality to be adopted

Shunt / Collaterals	Clinical Relevance	Proposed Modality for treatment
Left side collaterals **Excessive shunts (>3)**	• Single IGV 1 or multiple small IGV1 • Chances of glue embolisation are higher if done alone	• BRTO if L-R shunt > 10 mm, EUS guided therapy • No EGI
Since to few shunts	• Single draining shunt • Shunt with multiple collaterals • Multiple Shunts • No shunt and multiple collaterals	• BRTO, EUS- GVF, EGI • EUS-GVF, BRTO +TIPS, EGI • EUS- PGC + GVF , TIPS, EGI • EUS -PGC +/- GVF, No BRTO or TIPS feasible, no EGI possible but chances of embolisation high
Right side collaterals	• Single Large GV • Multiple GV • Recurrent bleeding with shunts (absent L-R shunt)	• EUS- GVF, TIPS, EGI • TIPS + BRTO, EGI (multiple sites) • EUS -PGC +/- GVF, No BRTO or TIPS feasible, EGI possible but chances of embolisation high

On the other hand patients with GV, who have collaterals and shunts on the right side of mid line will benefit more from TIPS (trans jugular intra hepatic porto systemic shunt), EUS guided therapy and EGI [4, 5, 9, 10].

In conclusion with the availability of imaging studies, it is possible now to delineate the anatomy of the GV prior to any therapy. With patients with left sided collaterals on imaging, a BRTO or EUS guided therapy should considered. In case of lack of expertise, EGI is still the treatment of choice however it is associated with recurrence, rebleeding and systemic embolisation.

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