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## Refractory Variceal Bleeding: Approach To Management (Mini Review)

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### Short Review

Acute variceal bleeding (AVB) is seen in 50-70% of patients with cirrhosis & portal hypertension (PHT) [1]. Over the time the severity of the bleeding and complications related to bleeding have significantly reduced due to improvement in clinical management, better availability of vasopressor drugs, improved endoscopic therapies as well as due to availability of definitive treatment options such as TIPS and liver transplantation. About 10-20% patients do not respond to initial management (failure to control bleeding within 48 hrs) and develop re bleeding within 5 days of starting the therapy (initial control of bleeding), these patients can be defined to have refractory variceal bleeding. The causes for refractory variceal bleeding are a. severe liver disease (high MELD-Na and CTP score) b. coagulopathy (increased PT, INR and low platelets) c. post EVL band ulcers (PEBU's) or slippage of bands [2-4].

Failure to control bleeding leads to poorer outcome due to a. worsening liver failure b. development of organ dysfunction due to hypovolemia and progressive shock c. systemic sepsis and increased gut translocation of bacteria.

The management in this group of patients depends upon the general condition of the patient and the liver disease status. There was a recent study which showed that endoscopic appearance of the varices after banding can determine the outcomes in addition to MELD-Na score [4].

I. Generalized treatment for stabilization of the patient:

a. This includes blood transfusion (packed red blood cell) to maintain a hemoglobin level of 7-8 gram / dl. The restrictive vs liberal treatment has shown that the restrictive strategy was better in terms of rebleeding and mortality [5].

b. The patients with coagulopathy can be treated either with blood products based on lab parameters (INR, platelet count, aPTT) or blood products based on TEG (thromboelastography). The conventional approach in coagulopathy with variceal bleeding is blood component based correction but the data does not support use of blood products in AVB. A recent RCT was done in cirrhotics with GI bleeding and cogulopathy, the patients had a non variceal bleeding source and were managed with TEG guided corrections in comparison to standard INR guided corrections. The study concluded that TEG based correction showed significant reduction in number of blood products

being used and there was no increase in complications, mortality and bleeding [6, 7].

c. The use of antibiotics is recommended for 5-7 days of management. Broad spectrum antibiotics is recommended in advanced liver disease and third generation cephalosporins are recommended in the compensated liver disease patients. Early administration of antibiotics after AVB has been associated with decreased incidence of rebleeding and morbidity [8].

d. Systemic vasopressors have to be used in the initial management of AVB and a RCT suggested that there is no difference in type of vasopressor drug used (terlipressin, octreotide or somatostatin). The vasopressors should be started as early as possible depending upon the availability of the drug. APASL criteria has advised a door to needle time akin to strategy used in acute coronary syndromes [2,3,9].

II. Control of bleeding i.e local or systemic.

a. The local therapies include balloon tamponade, using either triple lumen (Sengstaken tube) or four lumen (Minnesota tube) for control of AVB is useful in cases where there is failure to control bleeding at the initial endoscopy or emergency endoscopy is not available. A retrospective study showed that there was improvement of short term survival (1 month) as well as long term (1 year) after application of local tamponade in AVB [10].

b. local endoscopic therapies in form of glue & sclerosant injections, reapplication of bands is used, if available bands should be used and injection therapy such as sclerosant injection can be used in case of non applicable bands or failure to control bleeding after banding [11].

c. Hemospray application: in a recent RCT the patients with variceal bleeding were randomized to standard of care (SOC) vs addition of hemospray to SOC, the study showed that the group in which hemospray was used in addition to SOC the outcome and mortality significantly decreased as compared to SOC alone. However there were not refractory bleeding patients in this study and the patients selected were either with index or first variceal bleeding episode. But the hemospray could be used as one of the method for control of the local bleeding [12].

d. Placement of SEMS (self expanding metal stents), there are number of studies using SEMS specially designed for refractory variceal bleeding, most of the studies have shown that the SEMS helps in the control of bleeding locally however it has to followed by a definitive treatment in reducing the portal pressures (TIPS) for further management as the SEMS has to be removed within 1-2 weeks of deployment [13].

e. TIPS is a treatment for patients who present with refractory bleeding with early liver disease (MELD < 18). There is enough data now to suggest that TIPS is a SOC in refractory variceal bleeding [14].

f. Surgical options including liver transplantation: in patients who have refractory bleeding and are not candidates for TIPS due to advanced liver disease (MELD > 18), ACLF, prior history of recurrent hepatic encephalopathy can be taken for liver transplantation [15].

In conclusion, refractory variceal bleeding is noted in 10-20% of AVB episodes. Failure to control bleeding leads to further complications and increased morbidity – mortality. Treatment in such patients should to be individualised and depends upon the local set up and availability of options at the treating facility.

### Keywords:

AVB - Acute Vatical Bleeding; PHT - Portal Hypertension; PEBU: Post EVL Bleeding Ulcer

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