



Esophageal Stents for Acute Variceal Bleeding: Expanding the Possibilities

Àngels Escorsell^{1,2,3} · Juan C. García-Pagán^{1,2,3} · Jaime Bosch^{2,3,4}

© Springer Science+Business Media, LLC, part of Springer Nature 2017

Esophageal acute variceal bleeding (AVB) is a severe complication of portal hypertension carrying an overall 6-week mortality of 10–30% according to the degree of liver dysfunction [1, 2]. Current treatment of AVB combines hemodynamic stabilization with careful intravascular volume replacement, antibiotic prophylaxis, vasoactive drugs such as terlipressin, somatostatin, or its analogues, and endoscopic treatment, preferably endoscopic band ligation (EBL) [3].

In 10–20% of patients, AVB is unresponsive to initial endoscopic and pharmacologic treatment with failure either to control bleeding or early rebleeding (within 5 days) or with initial massive bleeding precluding endoscopic therapy [4]. The mortality in these patients is 30–50% in several reported series [5]. Two different approaches had been proposed for these patients: First, if bleeding is mild and the patient has a relatively good liver function, a second endoscopic therapy may be attempted [6], and if this fails, or bleeding is severe, it is usually controlled temporarily with balloon tamponade or self-expanding metal stent (SEMS) until a definitive treatment, preferably transjugular intrahepatic portosystemic shunt (TIPS), is applied [3]. Several case series suggest that SEMS had a high success rate with no major complications [7], confirmed by a multicenter randomized clinical trial (RCT) comparing esophageal SEMS with balloon tamponade in AVB refractory to endoscopic and pharmacologic treatment. This RCT showed that SEMS is more effective than balloon tamponade for the temporary control of esophageal AVB in treatment failures due to both a greater hemostatic effect and a lower rate of serious

adverse events, especially aspiration pneumonia [7]. Balloon tamponade and SEMS are considered only for temporary bleeding control as a bridge to definitive therapy (surgery or TIPS), with the advantage that SEMS can be left in place for up to 1 week, while tamponade cannot be maintained for over 24 h.

A second approach is to identify those patients at high risk of treatment failure and manage them more aggressively in order to prevent further deterioration and death despite final control of bleeding [9]. This is the rationale for preemptive or early TIPS [8]. Indeed, two RCT [9, 10] and two observational studies confirm the efficacy of early TIPS (within the first 72 h after admission) in such high-risk patients. Indeed, experts attending the Baveno VI consensus conference recommended the use of early TIPS in patients with Child–Pugh B cirrhosis and active bleeding despite vasoactive drug therapy and in all patients with Child–Pugh C cirrhosis (< 14 points) [3].

Therefore, TIPS is considered the treatment of choice in AVB patients at high risk of treatment failure and in those in whom less aggressive treatment has already failed (rescue TIPS). Unfortunately, many centers cannot offer early TIPS. Moreover, potential TIPS candidates may have circumstances precluding TIPS placement, i.e., Child–Pugh ≥ 14 points, active sepsis, acute kidney injury, hepatocellular carcinoma (HCC) in the projected course of the TIPS stent, failure to achieve hemodynamic stability, and acute-on-chronic liver failure (ACLF).

In this issue of *Digestive Diseases and Sciences*, Maiwall et al. explored the efficacy of SEMS in patients with ACLF, defined according to the Asia-Pacific Association for the Study of the Liver (APASL) definition, and refractory variceal hemorrhage [11–13]. This is a retrospective case–control single-center study in which the control patients were managed with vasoactive drugs and repeated endoscopic treatment with or without balloon tamponade. It included 88 advanced decompensated cirrhotic patients

✉ Àngels Escorsell
AESCOR@clinic.cat

¹ Liver Unit, Hospital Clínic, Barcelona, Catalonia, Spain

² Institut d'Investigacions Biomèdiques August Pi Sunyer (IDIBAPS), University of Barcelona, Barcelona, Spain

³ Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBEREHD), Barcelona, Spain

⁴ Swiss Liver, Inselspital, Bern University, Bern, Switzerland

and their matched controls (Child–Pugh C: 91%; Model of End-Stage Liver Disease (MELD) score 30–65).

Although this study did not strictly follow current “gold-standard” recommendations for AVB failures, it addresses a real-life problem that hepatologists must deal with in the setting of intensive care in advanced cirrhosis, especially in patients with an option for liver transplant. According to the results reported by Maiwall et al., 89% of patients receiving SEMs had achieved hemostasis at 5 days and also had a significantly higher actuarial probability of 6-week survival than patients in the propensity score-matched cohort even though the 6-week mortality in SEMs-treated patients was very high at 81%. The results of this study also confirm the observation by García-Pagán et al. on the lack of survival benefit of rescue TIPS, as compared with its preemptive use [9].

The more important message from Maiwall et al.’s study is that SEMs may be an alternative therapy for patients with refractory esophageal AVB that have contraindications for an emergency TIPS. In our recently published RCT [7], while all the patients receiving balloon tamponade subsequently required TIPS, half of the patients treated by SEMs could be managed conservatively with combined medical and endoscopic therapy after achieving hemostasis, with no serious adverse events; during the 5–7 days, the SEMs was in place, enabling sufficient time and clinical stability to enable the successful treatment of comorbidities such as infections, respiratory failure, and coagulopathy, improving the overall clinical condition. The outcome of these patients did not differ from that of those receiving TIPS as a definitive therapy [7].

Finally, considering the excellent results and safety profile of SEMs-treated patients with cirrhosis and ACLF, a condition that may preclude performing TIPS, a prospective trial of SEMs for other indications such as initial therapy versus preemptive TIPS in esophageal AVB in high-risk patients seems necessary.

References

- Fortune BE, Garcia-Tsao G, Ciarleglio M, et al. Child–Turcotte–Pugh class is best at stratifying risk in variceal hemorrhage. *J Clin Gastroenterol.* 2017;51:446–453.
- Reverter E, Genescà J, Augustin S, Abralde JG. Risk stratification in acute variceal bleeding: Child–Pugh versus Model for end-stage liver disease. *J Clin Gastroenterol.* 2017. <https://doi.org/10.1097/MCG.0000000000000815>.
- de Franchis R, Baveno VI Faculty. Expanding consensus in portal hypertension: report of the Baveno VI consensus workshop: stratifying risk and individualizing care for portal hypertension. *J Hepatol.* 2015;63:743–752.
- Garcia-Tsao G, Sanyal AJ, Grace ND, Carey WD. Prevention and management of gastroesophageal varices and variceal hemorrhage in cirrhosis. *Am J Gastroenterol.* 2007;102:2086–2102.
- D’Amico M, Berzigotti A, Garcia-Pagán JC. Refractory acute variceal bleeding: what to do next? *Clin Liver Dis.* 2010;14:297–305.
- de Franchis R. Revising consensus in portal hypertension: report of the Baveno V consensus workshop on methodology, diagnosis and therapy in portal hypertension. *J Hepatol.* 2010;53:762–768.
- Escorsell A, Pavel O, Cárdenas A, et al. Esophageal balloon tamponade vs esophageal stent in controlling acute refractory variceal bleeding: a multicenter RCT. *Hepatology.* 2016;63:1957–1967.
- Cabrera L, Tandon P, Abralde JG. An update on the management of acute esophageal variceal bleeding. *Gastroenterol Hepatol.* 2017;40:34–40.
- Garcia-Pagán JC, Caca K, Bureau C, et al. Early use of TIPS in patients with cirrhosis and variceal bleeding. *N Engl J Med.* 2010;362:2370–2379.
- Monescillo A, Martínez-Lagares F, Ruiz del Àrbol L, et al. Influence of portal hypertension and its early decompression by TIPS placement on the outcome of variceal bleeding. *Hepatology.* 2004;40:793–801.
- Maiwall, R, Jamwal, KD, Bhardwaj, A, et al. SX-Ella stent danis effectively controls refractory variceal bleed in patients with acute-on-chronic liver failure. *Dig Dis Sci.* (Epub ahead of print). <https://doi.org/10.1007/s10620-017-4686-8>.
- Garcia-Pagán JC, Di Pascoli M, Caca K, et al. Use of early-TIPS for high-risk variceal bleeding: results of a post-RCT surveillance study. *J Hepatol.* 2013;58:45–50.
- Rudler M, Cluzel P, Corvec TL, et al. Early-TIPS placement prevents rebleeding in high-risk patients with variceal bleeding, without improving survival. *Aliment Pharmacol Ther.* 2014;40:1074–1080.