

# PORTAL FIBROSIS AND SCHISTOSOMAL PORTAL HYPERTENSION: what is the best strategy for primary and secondary prevention of hemorrhage from esophageal varices

**HEADINGS** – Fibrosis. Hypertension, portal. Schistosomiasis. Esophageal and gastric varices.

Schistosomal portal hypertension (SPH) is the leading causes of non-cirrhotic portal hypertension in Brazil and bleeding from esophagogastric varices is one of its most dreadful complications. Although its frequency has been declining, SPH is one of the major causes of upper gastrointestinal bleeding in the northeastern part of the country, particularly from esophageal varices (EV)<sup>(21)</sup>. The best strategy to manage patients with SPH and EV is still a matter of controversy.

Primary prophylaxis and secondary prevention of bleeding from EV in portal hypertension due to cirrhosis has been well established based in several randomized controlled trials (RCT)<sup>(1, 23)</sup>. In this regard, non-selective  $\beta$ -blockers are generally indicated for primary prophylaxis of patients with cirrhosis and either medium or large EV<sup>(1)</sup>. For those cirrhotic subjects who had already experienced one episode of variceal bleeding, either  $\beta$ -blockers,  $\beta$ -blockers plus endoscopic band ligation (EBL) or EBL alone have been proposed<sup>(23)</sup>. Sclerotherapy has been replaced by EBL due to its higher incidence of side effects and rebleeding<sup>(6)</sup>. In addition, surgery, including either non-selective or selective shunts has been abandoned, in spite of its efficacy in prevention of rebleeding, due to its adverse impact in liver function and the development of portal systemic encephalopathy (PSE)<sup>(23)</sup>. The risk of portal vein thrombosis after either shunting or esophagogastric devascularization with splenectomy (EGDS)<sup>(2)</sup> and the

postoperative development of intraperitoneal adhesions is another major drawback of surgery for portal hypertension in cirrhosis, since they can render liver transplantation unfeasible in the near future.

As previously stated<sup>(4)</sup>, every treatment strategy applied for the prevention of rebleeding of EV in cirrhotics have also been tried in subjects with non-cirrhotic portal hypertension, particularly in patients with hepatosplenic schistosomiasis. In this respect, several papers have evaluated different treatment strategies for secondary prevention of bleeding from EV, including pharmacological treatment<sup>(7, 15, 18)</sup>, sclerotherapy<sup>(5, 14, 16, 20)</sup>, EBL<sup>(22)</sup> and surgery<sup>(3, 9, 12, 19)</sup>. Most of these data are uncontrolled and have focused different endpoints. In addition, the majority of those trials have addressed the results of different types of surgery and to my knowledge there is no well-designed controlled trial to date that have compared surgery with either endoscopic (sclerotherapy or EBL) or pharmacologic treatment for SPH.

RAIA et al.<sup>(19)</sup> have performed a RCT comparing three different types of surgery, namely proximal splenorenal shunting (PSS), distal splenorenal shunting (DSS) and EGDS and have concluded that the later was indeed the best surgical option for secondary prevention of bleeding from EV in schistosomiasis due to its low morbidity and mortality. In this trial, PSE was observed in none of the subjects submitted to EGDS and rebleeding occurred in only 14% of them in the

long term. These conclusions were also shared by several other authors<sup>(9, 13, 22)</sup>. However, some of them have combined EGDS with postoperative sclerotherapy to avoid recurrent hemorrhage from residual EV<sup>(10)</sup>. The risk of rebleeding from EV after EGDS is reported to range from 14% to 27%<sup>(9, 12, 19)</sup> and has been shown to be higher in subjects with massive splenomegaly, periportal fibrosis worse than grade I and large EV<sup>(8)</sup>.

In the present issue of ARQUIVOS de GASTROENTEROLOGIA, FERRAZ et al.<sup>(11)</sup> have reported similar results studying histological abnormalities of wedge liver biopsies obtained during EGDS in patients with SPH and comparing the degree of periportal fibrosis with recurrence of hemorrhage from EV. The same authors have previously reported their results encouraging EGDS combined to postoperative sclerotherapy in subjects with residual EV<sup>(9, 10)</sup> as the treatment of choice for secondary prevention of bleeding from EV in schistosomiasis. In this study, subjects submitted to EGDS with periportal fibrosis grade I had significantly less rebleeding when compared to their counterparts with grade II or III (3% vs. 21% and 16%, respectively)<sup>(11)</sup>.

Since these subgroups of patients with more periportal fibrosis, larger EV and splenomegaly are more prone to bleeding recurrences after EGDS, it is logical to assume that these parameters could be employed to identify non-invasively those subjects at risk for rebleeding after surgery, probably the best candidates for combined postoperative sclerotherapy or preferentially EBL.

Recently, measurement of esophageal variceal pressure have been attempted by endoscopic methods and this technique hold promises in selection of those patients at higher risk of rebleeding due to suboptimal drops in portal pressure after surgery<sup>(13)</sup>.

However, there are several unsolved questions regarding primary and secondary prevention of bleeding from EV in SPH. As previously outlined none of the surgical techniques have been compared to endoscopic and pharmacologic treatment modalities for secondary prevention of rebleeding. Most surgical centers favor EGDS combined if necessary to variceal eradication by endoscopic methods, but there is no consensus due to the scarcity of data. Unfortunately, to solve this issue, it is unlikely that other trials would be performed in this field, because the incidence of schistosomiasis and its hepatosplenic form are sharply decreasing.

In view of these facts, it is reasonable to argue that secondary prevention of rebleeding from EH in SPH should be managed according to local expertise and resources. It is important to emphasize that ectopic and gastric varices, that usually do not respond so well to endoscopic therapy, are fairly common in patients with SPH<sup>(9)</sup> and their presence should be kept on mind when planning treatment for those subjects. In the meanwhile, different treatment strategies are acceptable in dealing with subjects with SPH who had already bled. EGDS with or without postoperative EBL or  $\beta$ -blockers and/or EBL are reasonable options. In the later, EGDS could be further offered in case of pharmacologic and/or endoscopic failure. This policy has been also advocated in other forms of non-cirrhotic portal hypertension<sup>(17)</sup>. Taking into consideration the results of primary prophylaxis of bleeding from EV in cirrhotic portal hypertension, it can be speculated, in lack of definite data, that the same strategy could also be applied to SPH.

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**DESCRITORES** – Fibrose. Hipertensão portal. Esquistossomose. Varizes esofágicas e gástricas.

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#### REFERENCES

1. Boyer TD. Pharmacological treatment of portal hypertension: past, present and future. *Hepatology* 2000;34:834-9.
2. Chaib E, Pugliese V, Capacci ML, D'Albuquerque LC, Widman A, Bernardini AP, Silva AO, Saad WA, Machado MCC, Pinotti HW. Trombose portal: complicação precoce da desconexão ázigo-portal no tratamento das varizes esofágicas sangrantes. *Rev Hosp Clín Fac Med S Paulo* 1990;45:205-7.
3. Conceicao MJ, Argento CA, Vieira OM, Takiya CM, Chagas VL. Surgical indication in Schistosomiasis mansoni portal hypertension: follow-up from 1985 to 2001. *Mem Inst Oswaldo Cruz* 2002;97:165-6.
4. Conn HO. A randomized comparison of three types of surgery in schistosomal portal hypertension: many fewer answers than questions. *Hepatology* 1994;20:526-8.
5. Cordeiro F. Variceal sclerosis in schistosomotic patients: a 5 year follow up study. *Gastrointest Endosc* 1990;36:475-8.
6. De Franchis R, Primignani M. Endoscopic treatments for portal hypertension. *Sem Liver Dis* 1999;19:475-505.
7. El Tourabi H, El Amin AA, Shaheen M, Woda SA, Homeida M, Harron DW. Propranolol reduces mortality in patients with portal hypertension secondary to schistosomiasis. *Ann Trop Med Parasitol* 1994;88:493-500.
8. Eltoun IA, Taha TE, Saad AM, Suliman SM, Bennett JL, Nash TE, Homeida MM. Predictors of upper gastrointestinal bleeding in patients with schistosomal periportal fibrosis. *Br J Surg* 1994;81:996-9.

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9. Ferraz AA, Bacelar TS, Silveira MJ, Coelho AR, Camara-Neto RD, Araujo Jr JG, Ferraz EM. Surgical treatment of schistosomal portal hypertension. *Int Surg* 2001;86:1-8.
10. Ferraz AA, Lopes EP, Barros FM, Sette MJ, Arruda SM, Ferraz EM. Splenectomy plus left gastric vein ligation and devascularization of the great curvature of the stomach in the treatment of hepatosplenic schistosomiasis. Postoperative endoscopic sclerosis is necessary?. *Arq Gastroenterol* 2001;38:84-8.
11. Ferraz AA, Albuquerque PC, Lopes EPA, Araujo Jr JG, Carvalho AHF, Ferraz EM. The influence of periportal (pipestem) fibrosis on long term results of surgical treatment for schistosomotic portal hypertension. *Arq Gastroenterol* 2003;40:4-10.
12. Gawish Y, El-Hammadi HÁ, Kotb M, Awad AT, Anwar M. Devascularization procedure and DSRS? A controlled randomized trial on selected haemodynamic portal flow pattern in schistosomal portal hypertension with variceal bleeding. *Int Surg* 2000;85:325-30.
13. Lacerda CM, Freire W, Vieira de Melo PS, Lacerda HR, Carvalho. Splenectomy and ligation of the left gastric vein in schistosomiasis? The effect on esophageal variceal pressure measured by a non-invasive technique. *Keio J Med* 2002;51:89-92.
14. Maurizio R, Eugenio C, Roberto PR. Results of sclerotherapy for bleeding esophageal varices in patients with schistosomal liver disease. A retrospective study. *Hepatogastroenterology* 2000;47:424-8.
15. Mies S, Neto OB, Beer A Jr, Baia CE, Alfieri F Jr, Pereira LM, Sette MJ, Raia S. Systemic and hepatic hemodynamics in hepatosplenic Manson's schistosomiasis with and without propranolol. *Dig Dis Sci* 1997;42:751-61.
16. Mohamed AE, Karawi MA, Otaibi R, Hanid MA. Results of sclerotherapy in 100 patients. Comparison of the outcome between schistosomiasis and hepatitis B. *Hepatogastroenterology* 1989;36:333-6.
17. Okuda K. Non-cirrhotic portal hypertension versus idiopathic portal hypertension. *J Gastroenterol Hepatol* 2002;17:S204-S13.
18. Raia S, Mies S, Alfieri Jr F. Portal hypertension in mansonic schistosomiasis. *World J Surg* 1991;15:176-87.
19. Raia S, Silva LC, Gayotto LCC, Forster SC, Fukushima J, Strauss E. Portal hypertension in schistosomiasis: a long-term follow-up of a randomized trial comparing three types of surgery. *Hepatology* 1994;20:398-403.
20. Sakai P, Boaventura S, Ishioka S, Mies S, Sette Jr H, Pinotti HW. Sclerotherapy of bleeding esophageal varices in schistosomiasis. Comparative study in patients with and without previous surgery for portal hypertension. *Endoscopy* 1990;22:5-7.
21. Silva LC, Carrilho FJ. Hepatosplenic schistosomiasis. Pathophysiology and treatment. *Gastroenterol Clin North Am* 1992;21:163-77.
22. Siqueira ES, Rohr MR, Libera ED, Castro RR, Ferrari AP. Band ligation or sclerotherapy as endoscopic treatment for oesophageal varices in schistosomotic patients? Results of a randomized study. *HPB Surg* 1998;11:27-32.
23. Tarantino GI, Bosch J, Garcia-Pagan JC. Secondary prevention of variceal rebleeding. In: Arroyo V, Bosch J, Bruix J, Gines P, Navasa M, Rodes J, editors. *Therapy in hepatology*. Barcelona: Ars Medica; 2001. p.17-21.