

VARICEAL BLEEDING IN CIRRHOTIC PATIENTS: RISK FACTORS, EVOLUTION, TREATMENT

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Abstract

Objectives. The aim of this study was to monitor the risk factors that trigger variceal bleeding in cirrhotic patients, assess the severity of the bleeding and the efficacy of the endoscopic hemostasis techniques, as well as the recurrence of bleeding episodes and the mortality rate.

Materials and Methods. The current study was a prospective one, and it was conducted in the period November 2004 - December 2006 in the “O. Fodor” Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca.

It included 273 patients with upper gastrointestinal bleeding because of variceal rupture, assessed by emergency endoscopy. The patients included in the study met the clinical, biochemical, endoscopic and ultrasound criteria for liver cirrhosis. Its etiology and staging were documented from the patients’ observation charts.

Results. Out of the 273 cases of variceal bleeding there were 255 (93.4%) cases of bleeding from esophageal varices and 18 (6.6%) from gastric varices. Variceal bleeding episodes were more frequent in patients with alcoholic liver cirrhosis (51.28%). Most patients with variceal bleeding were in Child class B or C (77%). Mortality because of variceal hemorrhage was 2.93% in the study group. A number of 148 patients were treated by sclerotherapy and 125 patients with elastic ligatures. Bleeding relapses occurred in 65 (23.8%) patients within the study group, 43 men and 22 women. Variceal bleeding relapses were more frequent after sclerotherapy than after elastic ligatures.

Conclusions. Variceal bleeding occurred more frequently in patients with alcoholic cirrhosis stage Child C. In the current study mortality was relatively low. The treatment of bleeding recurrence is more difficult, hence variceal rupture prevention and application of elastic ligatures represent a therapeutic necessity.

Keywords: cirrhosis, variceal bleeding, sclerotherapy, elastic ligatures, bleeding relapse.

Introduction

Upper gastrointestinal bleeding is a major emergency and represents a major public health problem, its prevalence being 100-170:100000 people [1,2,3].

Bleeding from esophageal varices is only 5-11% of all gastrointestinal bleeding and in the U.S. approximately 30% of patients with compensated cirrhosis have esophageal varices when first diagnosed [4].

In cirrhotic patients, variceal rupture is the cause of 60-65% of the bleeding episodes in these patients [4].

Life prognosis in a patient with upper GI bleeding from esophageal varices depends on the severity of the

bleeding, the hepatic functional reserve (stage of cirrhosis), the extent and location of the varices (esophageal or gastric), their age, the existence of associated diseases and the treatment prescribed.

The aim of this study was to monitor the risk factors that trigger variceal bleeding in cirrhotic patients, to assess the severity of the bleeding and the efficacy of the endoscopic hemostasis techniques, to assess the relapses of bleeding episodes and the mortality rate.

Material and methods

- the study was a prospective one, and it was conducted in the period 11.2004-12.2006 in the “O. Fodor” Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca;

- 273 patients with variceal bleeding underwent upper gastrointestinal endoscopy for diagnosis and treat-

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ment in emergency conditions, at the Office of Digestive Endoscopy of the “O. Fodor” Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca;

- the study included only patients who had upper gastrointestinal bleeding because of variceal rupture, which was assessed by emergency endoscopic examination, performed within 6 hours of the patient’s admission;
- after identifying the variceal source of the upper GI bleeding, endoscopic therapy was performed (elastic ligatures or endoscopic sclerotherapy with hypertonic glucose solution, depending on the possibilities under emergency conditions);
- during periodical check-ups, the risk factors for variceal bleeding were monitored in cirrhotic patients, along with the efficacy of endoscopic treatment techniques, the relapses of bleeding episodes, the number and cause of deaths of cirrhotic patients who experienced upper gastrointestinal bleeding because of rupture of varices;
- the patients included in the study met the clinical, biochemical, endoscopic and ultrasound criteria for liver cirrhosis; the etiology and the staging of the disease were documented according to the patient’s observation charts;
- the results of the study were processed using Excel;
- quantitative data were expressed as median ± SE;
- the study was approved by the local ethics board of the “Prof. O. Fodor” Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca.

Results

The average age of the patients included in the study was 57.86 years, the extremes being represented by 26 and 82 years (Figure 1).

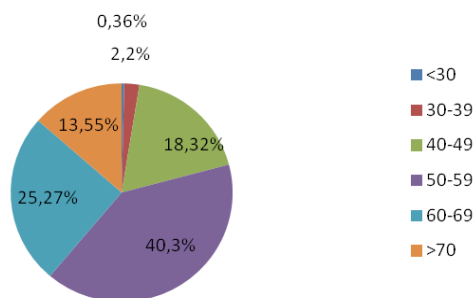


Figure 1. Representation of age groups using a structure chart.

Regarding the gender distribution of patients, there were 167 male patients (61.17%) and 106 female patients (38.83%).

Out of the 273 cases with variceal bleeding, 255 (93.4%) were cases of bleeding from esophageal varices and 18 (6.6%) were cases of gastric varices.

The rupture of esophageal varices depends on the grade of the varicose veins. Thus, it occurs more frequently

in patients with varices grade II and III. In our series there were 2 patients (0.73%) with bleeding from esophageal varices grade I, 131 patients (47.98%) with hemorrhage from esophageal varices grade II and 122 patients (44.7%) with bleeding from varices grade III. Gastric varices hemorrhage was found in 18 patients (6.59%) (Figure 2).



Figure 2. Variceal bleeding depending on the grade of the varicose veins - in a graphic form.

Variceal bleeding prevails in every clinical class. However, the risk of variceal rupture increases with the increased severity of the liver disease. Thus, variceal bleeding occurred in 63 (23%) patients in Child class A, 109 (40%) patients in Child class B and 101 (37%) patients in Child class C.

Mortality caused by variceal hemorrhage was 2.93% in the study group.

Death occurred in 8 patients as follows: 1 was in Child class A, 2 were in Child class B and 5 in Child C class. Hence, the mortality of patients with variceal hemorrhage is closely related to the Child class.

Variceal bleeding was more frequent in patients with alcoholic liver cirrhosis - 140 cases (51.28%); the next highest frequency was in patients with C virus cirrhosis - 69 cases (25.27%), B virus liver cirrhosis - 21 cases (7.69%), followed by other etiologies - 43 cases (15.76%).

Some of the 273 patients with variceal bleeding also had significant comorbidities: liver carcinoma (45 cases), gastric cancer (2 cases), lung cancer (1 case), liver metastases (1 case), pregnancy 28 weeks (1 case), peritoneal carcinomatosis (1 case).

Initial variceal bleeding was arrested in 269 of the 273 patients admitted under emergency conditions, using endoscopic techniques for hemostasis therapy. The failure of the endoscopic techniques imposed the use of the Sengstaken-Blakemore probe in 4 patients. A number of 148 patients were treated by sclerotherapy and 125 patients by performing elastic ligatures. Out of the 148 patients treated by sclerotherapy during the first bleeding episode, in 28 cases sclerotherapy was performed when the first bleeding relapse occurred, while in 16 cases elastic ligatures were performed. Out of the 125 patients treated by elastic ligature during the first bleeding episode, in 9 cases sclerotherapy was performed when the first bleeding

relapse occurred, while in 12 cases elastic ligatures were performed. Three porto-caval shunt interventions were performed, in 3 male patients of 41, 46 and 71 years of age. Each of these three patients presented three episodes of variceal bleeding. In the case of the 71-year old patient the third episode was a gastric varices bleeding episode.

Bleeding recurrence occurred in 65 (23.8%) patients of the study group, 43 men and 22 women (Figure 3).

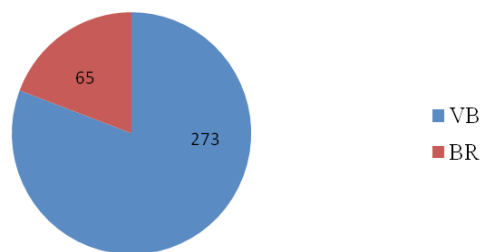


Figure 3. Bleeding recurrence (BR) out of the total number of variceal bleeding episodes (VB) in a graphic form.

The average age of those who experienced bleeding relapses was close to the average age of the group, which was 58.69 years. Thirty-seven patients underwent endoscopic treatment by sclerosis of varices with 2 ml of hypertonic glucose in 8-12 points intra- and para-varices, while 28 patients underwent elastic ligatures (4-6 elastic rings).

There were 17 cases of bleeding recurrence within 7 days of the first bleeding episode, 19 cases in the first month, 11 cases after 6 months and 18 cases after 1 year.

The failure of emergency endoscopic treatment is defined as continued or recurrent bleeding within less than five days, in spite of the completion of two sessions of sclerotherapy [5]. There are no predictors of the failure to indicate and require treatment change. In the study group there were 14 cases of bleeding relapses within the first 4 days of the endoscopic hemostasis.

Bleeding relapses were favored by the presence of hepatocarcinoma (26 patients out of the 65 patients with recurrent bleeding) and by the Child class C (23 patients).

In the present study, out of the 65 patients with recurrent bleeding, 13 were not treated with propranolol while 9 were treated with small doses of propranolol. Alcoholic cirrhosis was the dominant etiology in patients with recurrent bleeding (36 cases - 55.38%), while the Child class C was found in 22 patients (33.84%).

Out of the 8 deaths, 4 patients died during a bleeding relapse episode.

Discussion

The results of the current study show that bleeding from esophageal varices is more frequent than from gastric varices (93.4% versus 6.6%). Mention must be made that the rupture of the varices depends on the size of the variceal

veins, and thus rupture is more frequent in patients with esophageal varices grade II and III. The data obtained in the present study are in keeping or similar to those shown in the speciality literature [6].

Variceal bleeding was more frequent in male patients, the data obtained being in keeping or similar to those shown in the specialty literature [7].

The variceal hemorrhage prevailed in each clinical class and the variceal rupture risk increased with the increase in the severity of the liver disease. Thus, the majority of patients with variceal bleeding were Child class B or C (77%), our results overlapping those mentioned in literature [8,9,10,11].

Variceal bleeding was more frequent in patients with alcoholic liver cirrhosis (51.28%), the results being similar to those reported in literature [7,12].

In the current study, 19% of the patients who had variceal bleeding also had significant comorbidities, the most frequent being hepatocarcinoma which has been reported as a significant predictive factor for death in decompensated cirrhosis and early rebleeding in several studies [13,14].

Bleeding relapses were frequent (23.8%) and raised special problems related to the type of treatment (sclerotherapy or ligation), to the therapeutic booster in order to eradicate esophageal varices, to the adjuvant medication therapy for portal hypertension (beta-blockers) or to invasive procedures for the treatment of portal hypertension (TIPS) or liver cirrhosis (liver transplantation).

Bleeding recurred more frequently after sclerotherapy than after the application of elastic ligatures (29.72% versus 16.8%), the results of the current study being similar to those published in literature [15].

Approximately 34% of our patients experiencing bleeding relapses did not receive beta-blocker therapy or were given low-dose propranolol. For secondary prevention, a meta-analysis that compared beta-blockers plus isosorbide mononitrate versus endoscopic band ligation [16] showed no significant differences between treatments in preventing rebleeding or in preventing deaths. However, in trials using a mean beta-blocker dose of less than 80 mg/day [16], endoscopic band ligation significantly reduced rebleeding compared with beta-blockers plus isosorbide mononitrate. In addition, earlier meta-analyses usually included trials in abstract form, of which complete data were not available. Therefore, a further update of studies comparing endoscopic band ligation and pharmacological therapy should be performed. A controlled study in cirrhotic patients showed that propranolol significantly decreased early bleeding relapse [17]. The study also showed that the severity and etiology of the liver disease (cirrhosis) may play a role in the risk for bleeding relapses [18].

In the study group there were three porto-caval shunt interventions, each patient presenting three bleeding relapses during the period studied.

Mortality due to variceal hemorrhage was 2.93% in the study group, which was lower than that in the data published in the speciality literature [19]. Many studies have reported decreasing incidence and mortality rates of variceal bleeding [20,21,22] by progress of treatment modalities. The significant decrease in mortality in other studies is probably due to the improvement in treatment modalities such as endoscopic treatment, transjugular intrahepatic portosystemic shunt, and pharmacologic treatment including the use of prophylactic antibiotics and vasoactive drugs [23,24,25]. This is also applicable to our study.

The mortality of patients with variceal hemorrhage is closely related to the Child class (62.5% - Child C). Variceal bleeding prevails in every clinical class. However, the risk of variceal rupture increases with the increased severity of the liver disease. Hence, the mortality of patients with variceal hemorrhage is closely related to the Child class [8,9,11].

Conclusions

Variceal bleeding occurred more frequently in patients with alcoholic cirrhosis stage Child C. In our study mortality was relatively low.

Variceal bleeding recurrence was more frequent after sclerotherapy than after elastic ligatures.

Treating bleeding recurrence is more difficult. Hence, prevention methods against variceal rupture and the application of elastic ligatures are required as a means of treatment.

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