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ENDOSCOPIC TREATMENT AND PREVENTION OF BLEEDING FROM THE ESOPHAGUS AND VARICOSE VEINS OF STOMACH IN PATIENTS WITH PORTAL HYPERTENSION

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ABSTRACT

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The dissertation work was carried out in the Department of Esophageal, Gastric and Duodenal Surgery of the Scientific Surgery Center PLE/Public Legal Entity named after Academician M.A. Topchubashov.

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Actuality of the topic

Analysis of the literature on recent years shows an increase in the number of patients with portal hypertension. The authors attribute this to the increase in the number of patients with viral hepatitis in the population, as well as chronic toxic liver damage due to alcohol, drugs, as well as various nutritional factors. [1,2,3]

In most cases, radical treatment of portal hypertension is practically impossible in view of material and technical, as well as etiopathogenetic reasons, and the measures taken are often of palliative character.[4]

Among the complications of portal hypertension, gastrointestinal bleeding occurs in 40% of patients and recurrence of bleeding in 90% of patients. Bleeding from the esophagus and gastric varicose veins (EGVV) is characterized as lethal in 40-60% of cases, which once again proves the urgency of the problem.[5,6]

In addition to the risk of bleeding from EGVV during the development of the disease, high mortality rates indicate the importance of finding effective screening and treatment. Various methods are used to eliminate this complication. Laparotomy or X-ray endovascular surgery is performed with limited indications.[7,8]

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For this reason, the authors now consider the endoscopic prevention of bleeding important to improve the treatment outcomes. However, currently available models are not informative enough to predict the bleeding (including recurrence of bleeding) and to identify the patients at risk. [9]

In recent years, as in the clinics of leading countries, the modern endoscopic methods have been used to stop the bleeding from EGVV due to portal hypertension in Azerbaijan. Examples include endoscopic sclerotherapy (ES), endoscopic ligation (EL), and histoacrylic adhesive (HA) hemostasis.

It should be noted that the researchers often focus on describing the methodology or interpretation of recent treatment outcomes when using the latter. Depending on the severity of portal hypertension, there have been almost no studies on the timing of endoscopic hemostasis, preventıon of bleedıng recurrence, or comparative analysis of long-term treatment outcomes.

These data show that the prevention and treatment of EGVV bleeding in the course of portal hypertension by endoscopic methods is still relevant and important. Thus, endoscopic prevention of bleeding from EGVV should be determined depending on the assessment of prognostic factors. The development of a more effective algorithm for the treatment and prevention of complications indicated by the application of an informative prognostic model is important to improve the treatment outcomes.

Given the above, we have set the following goals and objectives:

Research objective was to improve the results of endoscopic prevention and treatment of bleeding from the esophagus, as well as varicose veins of the stomach in patients with portal hypertension.

Research tasks:

1. Study of the frequency of bleeding due to portal hypertension (from varicose veins of the esophagus and stomach) among patients with upper gastrointestinal bleeding in the clinic.

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2. Development of rational tactics for endoscopic treatment, depending on the localizasion of varicose veins, the intensity of bleeding and the severity of the patient during gastrointestinal bleeding due to portal hypertension.

3. Development of an informative prognostic model to study the likelihood of recurrence of bleeding from varicose veins of the esophagus and stomach.

4. Evaluation of the effectiveness of phased endoscopic prophylaxis after endoscopic treatment of bleeding from varicose veins of the esophagus and stomach.

Main provisions of the research put to defence

1. There is no need for long-term maintenance of the probe-obturator during endoscopic treatment of bleeding from varicose veins of the esophagus. Once the hemodynamics have stabilized, endoscopic hemostasis can be performed by removing the probe.

2. Endoscopic ligation is an effective method for the prevention of bleeding from varicose veins of the esophagus.

3. Application of the prognostic model based on the Bayes formula for endoscopic prevention of bleeding from varicose veins of the esophagus and stomach provides a basis for improving treatment outcomes.

4. In addition to the methods of endoscopic hemostasis used for the prevention and treatment of bleeding in patients, the use of β - blockers is mandatory.

5. The algorithm developed for the treatment and prevention of bleeding from varicose veins of the esophagus and stomach in patients with portal hypertension is informative for practicing physicians.

Scientific novelty of the research

1. The principles of approach to the gradual endoscopic prevention of bleeding from varicose veins of the esophagus and stomach due to portal hypertension have been improved.

2. A prognostic model for studying the likelihood of bleeding from varicose veins in patients with portal hypertension was developed based on the Bayes formula.

3. Endoscopic treatment and gradual prevention of bleeding from varicose veins of the esophagus and stomach in patients with portal

hypertension was carried out on the basis of an algorithm developed by us.

Theoretical and practical significance of the study

1. The developed algorithm provides a basis for improving the results of phased endoscopic prevention and treatment of bleeding in the category of patients referred to clinicians.

2. The prognostic model based on the Bayes formula is informative for studying the risk of bleeding from varicose veins of the esophagus and stomach in patients with portal hypertension.

3. The risk of bleeding from varicose veins of the esophagus and stomach in patients with portal hypertension is assessed by prognostic criteria and indicates the need for preventive measures.

4. The results are studied by practical surgeons, gastroenterologists and endoscopists and help the patients with portal hypertension who are more likely to bleed to choose more effective treatment tactics.

Application of research results

The results of the research were used in the clinical practice of endoscopy rooms of the Scientific Surgery Center named after academician M.A. Topchubashov and applied to patients included in the group of prospective research.

Approbation of scientific work: Materials of dissertation work were discussed at the interdepartmental meetings held at the Acad. M.A. Topchubashov ECM PLE under the participation of employees of the Departments of Esophagus, Gastrointestinal and Duodenal Surgery, Liver, Biliary and Pancreas Surgery, Colon and Colon Surgery, Anesthesiology and Intensive Care, II Department of Surgical Diseases of AMU (February 25, 2020) and at the meeting of the scientific seminar acting under the FD 1.12 Dissertation Council (January 30, 2021).

The structure and volume of the dissertation.

The dissertation was written in 159 pages in A4 format, "Times New Roman" in 14 pixel fonts and 1.5 line spacing in the Azerbaijani language. Introduction (5 pages), literature review (31 pages), research materials and methods (23 pages), 2 chapters devoted to the discussion of results, conclusion (19 pages), results (1 page), practical recommendations (1 pages) and the list of references (22

pages) and abbreviations (1 page) are given in 159 pages (total volume by characters- 197,258). The dissertation is illustrated with 29 tables, 18 figures and graphics. Tables are compiled with Microsoft Word-2013, graphs with Microsoft Excel-2013, Power Point-2013 programs. The pictures were taken with a digital camera and placed in the text. The bibliography covers 196 sources.

Relation of research to the problem plan of medical sciences:

The subject of the dissertation is included in the plan of Scientific-Research Center PLE of M.A. Scientific Surgery Center named after Tobchubashov (State Registration № 0106AZ00883)

Publications. The results of the dissertation are reflected in 8 articles and 3 theses.

MATERIALS AND METHODS OF THE RESEARCH

The current research is based on the study of the results of endoscopic treatment of 157 patients diagnosed with EGVV in 2012-2019 due to portal hypertension at the Scientific Surgery Center named after Academician M.A. Topchubashov. 111 (70.7%) of the patients examined, were male and 46 (29.3%) were female. The age of patients was 21-83, with an average of 46.3 ± 1.7. 77.7% of patients (122 people) were between the ages of 21-60, which indicates that the applicants were mostly able to work.

Varicose veins (VV) were found in the esophagus in 86 patients, in the gastroesophageal region in 62 patients, and in the stomach in 9 patients. Type I gastroesophageal veins were found in 15 patients, in which the localization of the veins showed a small curvature of the stomach, and type II gastroesophageal veins were observed in 47 people, in which the varicose veins covered the large curvature of the stomach. Isolated varicose veins in the bottom and antral part of the stomach were found in 9 patients.

Analysis of short-term and long-term results of endoscopic treatment was carried out on the basis of disease course, anamnesis, dynamic laboratory tests. Liver cirrhosis (LC) was diagnosed in 109 (69.4%) patients, of which 62 (56.9%) had LC of hepatitis virus, 25 (22.9%) had alcohol, and 6 (5.5%) had Wilson-Konovalov disease,

primary biliary cirrhosis was detected in 9 (8.3%) patients, and autoimmune processes in 7 (6.4%) patients. Developmental defects of the vessels of the portal system, cavernous transformation 12 (25.0%), and 22 (45.8%) patients were diagnosed with thrombophilia and chronic myeloproliferative blood diseases that cause portal vein thrombosis. Segmental thrombosis of portal hypertension and isolated occlusion of the splenic vein were detected in 14 (29.2%) patients as a result of trauma and inflammatory diseases of the abdominal cavity. At admission to the clinic, the severity of the studied patients was assessed according to the Child-Pugh classification. The degree of severity of 25 (22.9%) patients conformed to class A, 65 (59.6%) - B, and 19 (17.4%) - C.

194 different endoscopic operations were performed on observed 157 patients during their visit to the clinic. 81 (51.6%) patients (Group I) underwent emergency and urgent endoscopic hemostasis measures due to bleeding from EGVV during the clinic visit. In 76 (48.4%) patients, no cases of bleeding were detected at the time of admission to the clinic (Group II).

49 (60.5%) patients were brought to our clinic within the first 6 hours after the onset of bleeding. In general, 74 (91.4%) patients of Group I visited the clinic on the day of bleeding, i.e within 24 hours, and 7 (8.6%) on the following days (within 24-48 hours). The degree of bleeding in these patients was assessed on the basis of the classification proposed by A.I. Gorbashko and it was found that the majority of patients (86.4%) were admitted to the clinic in moderate to severe condition. These patients were primarily compensated for blood deficiency, correction of posthemorrhagic anemia, as well as treatment and prevention of bleeding from EGVV.

In 38 (24.2%) patients, comorbidities aggravated the underlying disease. Among them, ischemic heart disease 36 (22.9%), hypertension - 29 (18.5%), Type II diabetes - 26 (16.6%), respiratory diseases (chronic bronchitis, bronchial asthma, respiratory failure) - 23 (14.6%), pathologies of the urinary system (chronic pyelonephritis, urinary stone disease, chronic renal failure) were found in 11 (7.0%) patients.

Short-term and long-term treatment outcomes were evaluated comparatively. Traditionally, short-term results have reflected the

length of time the patients have been treated in a clinic, while long-term results have provided a period from the time the patients are discharged from the clinic to their return to the hospital for re-examination or death. In statistical data processing, the differences in total patients between the baseline and control groups were determined by Pearson's χ^2 and Fisher's exact criteria for categorical variables, and mean values for normally distributed variables were compared by Student's t-criterion and Mann-Whitney's U-criterion for abnormally distributed variables. has been. Statistical studies were conducted using MS EXCEL and S-PLUS programs.

Recent results of endoscopic treatment in patients with portal hypertension

The results of clinical observations of 157 patients who have recently received endoscopic treatment have been studied. Based on the algorithm we developed, the effectiveness of the performed enoscopic hemostasis, depending on the localization of VV, was compared.

Results of endoscopic treatment and prevention of varicose veins of the esophagus: EL (62 (72.1%) patients) and ES (24 (27.9%) patients) sessions were performed for the treatment and prevention of VV developed against the background of portal hypertension in 86 patients. We performed EL and ES procedures as a type of palliative intervention that did not prevent the portal hypertension and treated patients. Out of 86 patients, VV was detected in the middle and lower 1/3 of the esophagus in 23 (26.7%) and 63 (73.3%) patients, respectively. In 46 (56.8%) of these patients, the endoscopic hemostasis due to bleeding from VV was performed urgently. Endoscopic treatment was performed systematically in 40 (46.5%) patients due to the absence of esophageal VV bleeding.

Bleeding from esophageal VV was registered in 46 (56.8) patients, it was identified that 8 (17.4%) of them had mild bleeding, 23 (50.0%) - moderate, and 15 (32.6%) patients had severe bleeding. In 42 (91.3%) of these patients, portal hypertension developed due to LC, in 4 (8.7%) patients due to extrahepatic (portal vein thrombosis in 2 patients, splenic vein thrombosis in 2 patients). The severity of the patients was assessed according to the Child Pugh classification

(13 (30.95%) for class A, 17 (40.48%) for class B, and 12 (28.57%) for class C). Concomitant diseases were detected in 16 (18.6%) patients. Esophageal VV was diagnosed as grade I in 8 (17.4%) patients, grade II in 14 (30.4%) patients, grade III in 15 (32.6%) patients, and grade IV in 9 (19.6%) patients. Topical visualization of venous perforation during bleeding was possible in 5 (10.9%) patients. In 13 (28.3%) patients, a white or red thrombus in the vein after the compression of the bleeding vessel with a pre-obturator probe, or indirect symptoms on the vein, could be identified.

In 46 patients with ongoing or recent esophageal VV bleeding, 31 patients underwent EL and 15 patients underwent ES to achieve the hemostasis during diagnostic EQDS. Due to technical difficulties in emergency situations, as well as low hemostasis rates, it was necessary to install the obturator-probes in 12 (26.1%) patients. Recent recurrence of bleeding after EL has been reported in 1 patient with Child Pugh class C LC. The patient was able to stop the bleeding by performing ES. The peculiarity of the planned EL after ES in this patient was that the patients were better prepared psychologically and did not have significant changes in the hemostasis system. In the literature, it is generally accepted to keep the obturator probe for 12-24 hours, followed by endoscopic hemostasis. In our practice, however, we did not see the need to maintain the obturator probe for long periods of time. After the hemodynamic parameters stabilized and the probe was removed, we performed the endoscopic hemostasis. The results showed that the effect of persistent hemostasis in the group of patients with delayed EL was 93.5% (29 out of 31 patients). Overall, the hemostatic efficacy of ES in this group of patients was 93.3% (hemostasis was satisfactory in 14 of 15 patients). To prevent the recurrence of bleeding, 15 patients underwent ES were routinely EL of VGV of the esophagus at a later stage. For the purpose of prevention of esophageal VV hemorrhage, ie EL was performed in 31 (77.5%) out of 40 (46.5%) patients without a history of hemorrhage, and ES in 9 (22.5%) patients in a planned manner.

No recurrent bleeding or lethality has been reported in patients with esophageal VV in the recent period of endoscopic treatment.

The outcomes of endoscopic treatment and prevention of varicose veins of gastroesophageal veins: Varicose veins of gastroesophageal

veins were identified in 62 patients with observed portal hypertension. EL (29 (46.8%) patients) and ES (33 (53.2%) patients) were used as endoscopic treatment for these patients for treatment and prevention. Type I gastroesophageal veins were identified in 15 patients. EL sessions were performed as endoscopic treatment of these patients. Type II gastroesophageal veins were identified in 47 patients, of whom 35 underwent ES and 12 underwent EL. Among 62 gastroesophageal patients, 29 (46.8%) patients belonged to group I, and 33 (53.2%) patients to group II.

43 (69.4%) patients were diagnosed with viral LC, 19 (30.6%) patients were diagnosed with extrahepatic portal hypertension due to total thrombosis of the portal vascular system on the background of chronic myeloproliferative blood disease or hemophilia. Of the 43 (69.4%) gastroesophageal VVs assessed by Child Pugh, 2 (4.7%) with class A, 29 (67.4%) with class B, and 12 (27.9%) with class C were identified at patients. Concomitant pathology was detected in 19 (30.6%) people.

ES was performed in 29 (46.8%) patients who turned to with urgent bleeding from gastroesophageal varicose veins. EL has not been used in bleeding from gastroesophageal VV because the ligated nodules, together with the rings, are exposed to aggressive gastric juice and may separate during active gastric peristalsis. Mild bleeding was recorded in 3 (10.3%), moderate (12.4%) and severe (14.3%) patients in the hospital. Of the 29 patients with ongoing bleeding, 8 (27.6%) had type I and 21 (72.4%) had type II gastroesophageal vein.

Out of 29 patients with hemorrhage from catarrhal esophageal VV, 26 (89.7%) were diagnosed with LC and 3 (10.3%) with extrahepatic portal hypertension. Subcompensation was observed in 18 (69.2%) patients and LC with decompensation in 8 (30.8%) patients. There were no patients with cirrhosis of the liver in the compensatory stage among this category of patients.

In 20 (69.0%) of the 29 patients with gastroesophageal VV who turned to with bleeding, it was possible to visualize the source of the bleeding during the initial diagnostic of EQDS, and the ES was performed in the context of ongoing bleeding.

In 9 (31.0%) patients it was possible to stop profuse bleeding with an obturator probe due to the failure to attempt to stop bleeding endoscopically, as well as the instability of hemodynamics.

Thus, the rate of successful implementation of ES at the initial stage during ongoing bleeding from gastroesophageal VV was 69.0% (20 out of 29 patients). When analyzing the emergency and immediate ES results of the gastroesophageal veins, it was found that it was convenient to conduct the ES in a straight projection, as the source of bleeding was located slightly below the lower dentition of the esophagus. Delayed ES in 1 (3.4%) patients was repeated ES in the next 5 days to prevent bleeding recurrence.

Bleeding relapses were detected in 2 patients with type II gastroesophageal vein recurrence of esophageal gastric bleeding. No recurrences of bleeding were reported in patients with type I gastroesophageal vein. Thus, the fact that the hemostatic effect for gastroesophageal veins in the near future amounted to 82.8% (24 out of 29 patients) is of particular interest.

ES was performed in the next 3-5 days due to recurrence of bleeding in 3 (10.3%) patients. The hemostatic effect of ES, which was routinely performed to prevent recurrence of bleeding in these patients, was effective in all cases.

Thus, the mortality rate in the emergency and urgent treatment group was 6.9%. In these patients, as noted, the cause of death was a recurrence of bleeding from VV.

In the prevention of recurrence of bleeding from gastroesophageal VV, ES was performed with indications. At that time, the manipulations performed on patients were carried out in order to stop the bleeding at an early stage. ES (17 (58.6%) patients) and EL (12 (41.4%) patients) sessions were performed to prevent recurrence of bleeding in each of these patients. Bleeding was recorded in 2 (6.9%) patients in the group of prevention of recurrence of bleeding from gastroesophageal VV. These patients had grade III and IV gastroesophageal veins, respectively. After the ES, the patients were discharged home in a satisfactory condition. No lethality has been identified in patients with type II gastroesophageal VV during relapse prevention.

33 (53.2%) patients with gastroesophageal VV were referred to group II, who turned to the clinic for the prevention of bleeding recurrence. In these patients, the extrahepatic portal hypertension is

caused by chronic myeloproliferative disease or thrombophilia. Combined EL and ES were performed in 1 patient with gastroesophageal VV.

In general, the analysis of recent complications of endoscopic treatment and prophylaxis of patients applying for phased prophylaxis revealed that bleeding occurred in the type II gastroesophageal veins EL. Bleeding occurred in 4 (13.8%) of the 29 patients exposed to EL, and in 1 (25%) of the patients after ES (4 out of 4).

Recently, a patient with 4 gastroesophageal VV who applied for the gradual prevention of bleeding and had a recurrence of bleeding after EL was given 3 sessions of ES.

It should be noted that 2 (6.1%) of the 33 patients who applied for phased prevention of bleeding recurrence were included in the list of patients awaiting the liver transplantation. They were sent to our clinic because of the risk of bleeding.

Recent results of endoscopic treatment of isolated gastric varicose veins: Isolated gastric veins have been identified in 9 patients. Among these patients, 6 (66.7%) were admitted to the clinic with bleeding from VV, and 3 (33.3%) turned to without bleeding, i.e to prevent bleeding. In order to stop bleeding from isolated gastric veins, obturation with histoacrylic adhesive was performed in 4 (66.7%) patients and ES in 2 (33.3%) patients. Urgent endoscopic manipulations were performed in this category of patients with technical convenience. In the last 5-6 days, 9 (5.7%) patients had recurrent bleeding and underwent the surgery due to the ineffectiveness of endoscopic intervention. He underwent immediate surgery, underwent surgery by M.D. Pasiori and achieved hemostasis. Thus, the lethality occurred in 2 (33.3%) patients with gastric VGV complicated by bleeding. In order to prevent recurrence of bleeding from varicose veins of the stomach, 2 (33.3%) patients were re-obturated with histoacrylic adhesive (HA). When analyzing the possibilities of conducting ES in a planned manner, it was found that the intervention was not technically difficult.

Lethality did not occur. The absence of complications and lethal outcomes in the planned group of patients suggests that the prophylactic measures should be taken without waiting for

recurrence of esophageal-gastric bleeding, which leads to worsening in patients with isolated VV. The limited nature of the use of ES when VV is located in the stomach is a matter of concern. It is often replaced by HY in a planned manner.

As noted, 3 (33.3%) patients underwent planned endosopic treatment to prevent bleeding from isolated gastric VV. The severity of portal hypertension in these patients according to Child Pugh's classification developed in 1 patient with class B LC and in 2 patients with extrahepatic causes. Obstruction of the stomach with VV HY was performed in 1 (33.3%) of the patients of this category, ES was performed in 2 (66.7%). The peculiarity of the planned ES was that the patients were better prepared psychologically and did not have coagulogram changes.

No complications such as lethality or bleeding were identified among this category of patients.

Having studied the results obtained and the characteristics of the enoscopic hemostasis methods performed in a group of observed patients, we developed an algorithm for examination and treatment. The developed algorithm is base**d** on the traditional endoscopic treatment of bleeding in patients with portal hypertension. The issue attracting attention is the conduct of ES during endoscopic hemostasis, which is performed urgently against bleeding. However, since EL is more reliable than ES, it was preferred to perform it in last patients who had undergone later in a planned manner. However, the latter has some peculiarities. First of all, the measures are focused at stabilizing hemodynamics and initiating examinations. In parallel with anamnestic and laboratory examinations, USM Doppler was performed to determine portal blood flow to patients, while EQDS was performed to determine the source of bleeding. When profuse bleeding was observed during the examination, we did not find it necessary to keep the obturator in patients for 12-24 hours, as indicated in the literature. 1-2 hours after stabilization of hemodynamics, depending on the localization of the varicose vein and bleeding vein, endoscopic hemostasis methods were performed. When bleeding from the esophagus or cardiosophageal varicose veins was detected, ES was considered appropriate in the initial stage, and histoacrylic

adhesive in the stomach to provide hemostasis. When endoscopic hemostasis methods did not give any effect, surgery is performed. Surgery is mainly indicated when cardioesophageal and gastric VGV bleeding cannot be stopped by endoscopic hemostasis.

Another peculiarity of the algorithm was the determination of the appropriate period for effective prevention of bleeding using a prognostic model based on the Bayesian formula, among other tests during the phased prevention of bleeding.

Outcomes of the long-term period after initial endoscopic treatment

The long-term outcomes of the observed patients were monitored for 2 years (6 months, 12 months and 24 months after the initial endoscopic examination and treatment). At appropriate times, patients applied to the clinic for endoscopic examination and treatment, and a special questionnaire was conducted. Six months after endoscopic treatment and prophylaxis in the initial application, 123 (78.3%) out of 157 patients invited to study the hemostatic efficacy came to the clinic. At 6 months of endoscopic treatment, according to the Child-Pugh classification, the severity of patients was 33 (37.1%) for class A, 46 (51.7%) for class B, and 10 (11.2%) for class C.

Abdominal ascites was detected in 28 (22.8%) and large-volume ascites in 12 (9.8%) patients. Bleeding was detected in 14 (11.4%) patients during this period of observation. ES was considered the method of choice as a method of endoscopic hemostasis in patients with hemorrhage from VV. In this category of patients, EL sessions were routinely performed after bleeding was stopped and hemodynamics were stabilized. The endoscopic hemostasis effect was effective in 12 (85.7%) of 14 patients. The use of complex medications and endoscopic hemostasis in other 2 (1.6%) patients was ineffective and resulted in death. In these patients, LC in the decompensation stage causing portal hypertension was identified.

Venous recurrence was identified in 15 (12.2%) patients 6 months after the initial hemostasis (Figure 1). Endoscopic examination of these patients revealed grade III-IV VV. During this period, 10 patients with portal hypertension were diagnosed with

grade III-IV esophageal VV, and 5 with gastroesophageal VV. No VV was detected in the stomach. During this period of observation, endoscopic treatment was performed in patients with relapsing venous insufficiency in the amount of EL. There were no complications with the procedure.

Within 12 months after the initial endoscopic treatment, 104 patients were referred to the clinic for examination and treatment. Thus, during this period of observation, 37 (48.7%) patients were classified as Class A, 31 (40.8%) as Class B, and 8 (10.5%) as Class C. During this period of treatment, QS progression did not occur in most patients. Ascites was detected by USM in 28 (26.9%) patients, of which 18 (64.3%) patients had small ascites and 10 (35.7%) patients had large ascites. Comparative ustras Doppler examinations have shown the effectiveness and importance of drug correction of portal hypertension in the period after the initial endoscopic hemostasis. The use of β-blockers, which improve the morphofunctional condition of the liver, as well as prescribed, should be noted as part of conservative measures.

Analysis of the results 12 months after the first endoxopic intervention shows that bleeding from EGVV was detected in 18 (17.3%) patients during that period. During this period, grade III-IV VV was detected in the esophagus (14 patients) and in the gastroesophageal region (8 patients). These patients underwent 2-3 sessions of EL for endoscopic prevention of bleeding. During this period, endoscopic hemostasis was performed to prevent the recurrence of bleeding, and no complications were reported. The studied patients were able to follow up with 78 patients 24 months after the first endoscopic treatment. Examination revealed that 64 (82.1%) of these patients developed portal hypertension LC, and 14 (17.9%) developed hepatic causes.

During this period of observation, 23 patients of class A (35.9%), 29 patients of class B (45.3%), 12 patients of class C (18.8%) were identified. Bleeding recurrence occurred in 17 (21.8%) patients 24 months after endoscopic treatment. Venous recurrence was 17.9% (14 patients) and mortality was 17.9% (8 patients) during this period (Figure 1).

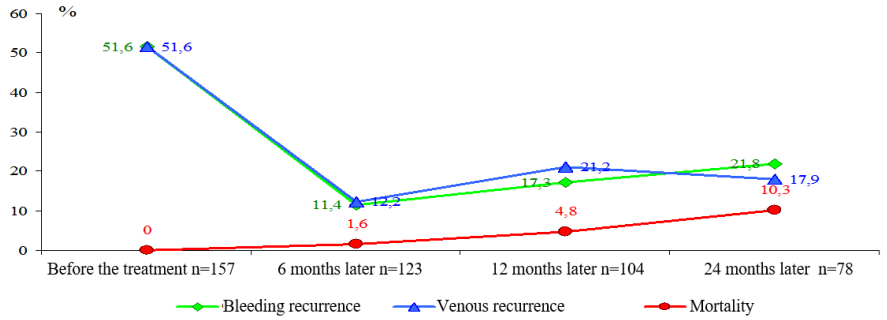

Figure 1. Dynamics of bleeding outcomes during a 24-month outcome

ES was considered the method of choice as a method of endoscopic hemostasis in patients with hemorrhage from VGV. EL sessions were routinely performed in this category of patients after bleeding was stopped and hemodynamics were stabilized. The effect of edoscopic hemostasis was effective in 12 (70.6%) of 17 patients. In 5 patients, biological death occurred due to the inability to stop the bleeding, and in 3 patients the use of complex drug and endoscopic hemostasis methods was ineffective and resulted in death. In these patients, QS in the stage of decompensation caused by portal hypertension was identified.

Endoscopic examination of patients with recurrent venous recurrence within 24 months of initial endoscopic treatment revealed grade III-IV VV. In these patients, EL methods were routinely applied and patients were discharged home in a satisfactory condition. Analysis of venous recurrence revealed that within 24 months after the initial endoscopic hemostasis, 9 patients with portal hypertension were diagnosed with grade III-IV esophageal VV and 5 with gastroesophageal VV. HA and sclerotherapy have been effective in the endoscopic treatment of gastric bleeding VV. In the period of 24 months after the endoscopic hemostasis, small ascites was detected in the abdominal cavity in 21 (26.9%) and large ascites in 11 (14.1%) patients. Due to the ineffectiveness of endoscopic hemostasis, 4 patients underwent TIPS surgery. The operation was performed successfully.

Outcomes of predicting bleeding recurrence and risk factors over long-term treatment

Analysis of the literature data shows that there is no generally accepted model for predicting the bleeding recurrence in patients with portal hypertension after initial endoscopic treatment. We studied the prognostic significance of risk factors for the gradual prevention of bleeding by assessing the severity of patients with portal hypertension 6-12 months after endoscopic treatment. During that period, 104 of the 157 patients examined applied to the clinic for re-examination. Within 6-12 months, recurrence of bleeding was recorded in 18 patients, and no bleeding was observed in 86 patients. We used the well-known Bayes formula to predict the bleeding recurrence (BR). According to empirical data, 6 factors that significantly affect the occurrence of postoperative BR were selected from the risk factors (rate of VV expansion, vasculopathy and gastropathy, severity of patients on Child Pugh, thrombocytopenia, bad habits, portal venous hypertension). Diagnostic tables were prepared for each risk factor by determining the frequency of encounters. The above indicators are summarized and a single prognostic table combining the significant risk factors is compiled. The probability of bleeding was then studied according to the Bayes formula, depending on the risk factors. In order to assess the effectiveness of the prognostic model developed by us, the results of 18 patients with recurrence of bleeding and 33 patients without recurrence (51 people in total) were studied. The efficiency of the prognostic model developed using the Bayes formula was 82.8-93.9%. The model developed by us using the identified key prognostic parameters has been effective in preventing bleeding relapse. The prognostic model developed by us (using the Bayesian formula) allows to reflect the real situation of EGVV in patients with portal hypertension. With the application of the latter, the basis for the improvement of treatment results is created in this category of patients by the timely implementation of measures for the gradual prevention of bleeding. The effectiveness of the prognostic model developed for the prevention of bleeding from EGVV in patients with portal hypertension at 12-24 months has been studied comparatively. For this purpose, 78 patients were divided into 2 groups (control and basic): 42 patients were included in the main group, and endoscopic prevention of

bleeding was carried out using a prognostic model. The control group included 36 patients who did not have phased endoscopic prevention of bleeding. As a result of the application of the prognostic model developed by us 12-24 months after the initial endoscopic treatment, the measures taken to prevent bleeding from EGVV led to a 21.4% reduction in bleeding recurrence. Bleeding occurred in 12 (33.3%) patients in the control group, while endoscopic phased prophylaxis of bleeding was detected in 3 (7.1%) patients (Table 1).

Table 1.

Results of phased prevention of bleeding using a prognostic model for a long period of 12-24 months

Endoscopic treatment	Bleeding recurrence		Lethality	
	abs.	%	abs.	%
Control, n=36	12	33,3	5	13,9
Basic, n=42	5	11,9	3	7,1
p	<0,05		>0,05	

Comparative observations of bleeding during endoscopic treatment of EGVV in patients with portal hypertension The application of a prognostic model designed for the prevention of mortality has been shown to help reduce mortality. Mortality was 24 (13.9%) in patients who did not receive endoscopic prophylaxis on time, and 3 (7.1%) in patients who received prophylactic measures on time (6.8% lower, p <0.001). It should be noted that the proposed method of endoscopic hemostasis based on the assessment of risk factors for bleeding from EGVV in patients with portal hypertension led to a 10.3% reduction in venous recurrence. Thus, the results of a comparative study showed that endoscopic treatment of EGVV and hemorrhage control methods in accordance with the algorithm based on the prognostic criteria we developed were effective in improving treatment outcomes.

RESULTS

1. Bleeding from the esophagus and varicose veins of the stomach due to portal hypertension accounted for 22.8% of patients admitted to the clinic for upper gastrointestinal bleeding.

2. EL-93.5%, (p<0,001), ES-93,3% (p<0,001), gastroesophageal VV and ES 82.8% were effective in the treatment of bleeding from varicose veins of the esophagus. In the endoscopic treatment of gastric VV bleeding, obturation with histoacrylic adhesive was effective in 77.8% of patients.

3. The sensitivity of the prognostic model developed by us to study the probability of bleeding from varicose veins of the esophagus and stomach was 88.9%, specificity 93.9%, and efficiency 82.8-93.9%.

4. The implementation of phased endoscopic treatment and prevention of bleeding based on the algorithm developed by us led to a 21.4% reduction in bleeding recurrence and a 6.8% reduction in mortality12-24 months after the initial endoscopic treatment.

PRACTICAL RECOMMENDATIONS

1. In addition to traditional general clinical and endoscopic examinations to study the possibility of bleeding from varicose veins of the esophagus and stomach in patients with portal hypertension, the use of a prognostic model based on the Bayes formula provides a basis for improving treatment outcomes.

2. In patients with portal hypertension, endoscopic hemostasis should be performed immediately after obstruction of the esophagus and gastric varicose veins, temporary hemostasis with obturator-probe and stabilization of hemodynamics.

3. Endoscopic ligation and sclerotherapy are not radical treatments. Against the background of venous recurrence, their hemostatic efficacy decreases after 12-18 months. This requires that these patients be monitored at the dispensary and repeat endoscopic interventions.

4. Child Pugh assessment of the severity of the disease in patients with portal hypertension is an important prognostic criterion for studying the likelihood of bleeding.

5. Chronic myeloproliferative diseases double the probability of bleeding during the 1-year follow-up period ($p < 0.05$). Therefore, decompensation of the main hematological parameters (thrombocytosis) should be considered as the main prognostic criterion.

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