

LIFE QUALITY OF PATIENTS WITH HEMORRHAGIC COMPLICATIONS OF PORTAL HYPERTENSION IN THE REMOTE PERIOD AFTER ENDOSCOPIC AND SURGICAL TREATMENT

Kadirov Rustam Nadirovich¹, Khadjibaev Farhod Abdukhakimovich², Mamarajabov Sobirjon Ergashevich³

¹Candidate of Medical Sciences, Samarkand Branch of the Republican Research Centre of Emergency Medicine Samarkand, Uzbekistan. dr.kadirov.rustam@gmail.com

²Doctor of Medical Sciences, Republican Research Centre of Emergency Medicine. Tashkent, Uzbekistan farhodsurgeon@mail.ru

³MD, PhD. Samarkand State Medical Institute. m_sobirjon@yahoo.com

Received: 03.01.2020

Revised: 08.02.2020

Accepted: 15.03.2020

Abstract

Bleeding from varicose veins of the esophagus and stomach in patients with portal hypertension syndrome and cirrhosis of the liver remains the cause of death in 30-80% of cases with the absence or delay of medical care. The only radical method of treating these forms of pathology is liver transplantation, however, today in the whole world its demand remains much higher than the real possibilities of transplant services. Therefore, palliative techniques, including endoscopic technologies of hemostasis and surgical interventions aimed at the separation of the portal vein system by the pool of unpaired and semi-unpaired veins. One of the leading criteria for the effectiveness of palliative care is quality of life.

The purpose of this study: a comparative analysis of the quality of life of patients of different sex and age in the long term after endoscopic and surgical treatment of bleeding from varicose veins of the esophagus and stomach.

The research method was to determine the quality of life by calculating the calculated indicators of the SF-36 questionnaire in 338 patients aged 22 to 50 years who were urgently admitted for inpatient treatment for ongoing bleeding from varicose veins of the esophagus and stomach arising from portal hypertension cirrhotic origin. All study participants were divided into 2 groups depending on the methods used to stop bleeding: endoscopic ligation and / or sclerotherapy (group No. 1, n = 162) and surgical azigo-portal isolation according to M.D. Paciora (group No. 2, n = 176). SF-36 values were determined before treatment, 3 months, 1, 2 and 3 years after treatment.

Results: After 3 months, 1, 2 and 3 years after using endoscopic hemostasis methods, in all patients, without exception, the SF-36 indices were 11-74% higher than those who underwent surgery according to M.D. Paciora. In group No. 1, the best results were obtained in 31-40- and 41-45-year-old patients, lower - in patients aged 22-25, 26-30 and 46-50 years old, in group No. 2 - as the number increased past years, a decrease in scores on all scales SF-36 36

Conclusion: The use of endoscopic ligation and / or sclerotherapy in order to stop bleeding from varicose veins of the esophagus and stomach in patients of different sex and age provides for at least three years after the intervention a higher quality of life compared to that after the operation of azigo-portal dissociation according to the method of M.D. Paciora.

Keywords: Quality of Life, Questionnaire SF-36, Bleeding from Varicose Veins of the Esophagus and Stomach Portal Hypertension, Endoscopic Ligation and / or Sclerotherapy, Operation M.D. Paciora.

© 2020 by Advance Scientific Research. This is an open-access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>)
DOI: <http://dx.doi.org/10.31838/jcr.07.04.315>

INTRODUCTION

The proportion of bleeding from varicose veins of the esophagus and stomach (BVVEaS) among all hemorrhages from the gastrointestinal tract is approximately 4% - the fourth most common post-bleeding gastroduodenal, colonic and esophageal (in patients with Mellori-Weiss syndrome) [Beloborodov V.A. et al., 2019]. The reason for the development of BVVEaS is a persistent increase in hydrodynamic pressure in the portal vein system (portal hypertension, PH) above 10-12 mm Hg, which is most often formed (80-90%) due to cirrhotic liver damage [Paciora M. D., 1984; Ettinger O.A. 2012; KhoronkoYu.V. et al., 2013].

Currently, the incidence of liver cirrhosis (LC) in residents of different countries of the world varies on average from 20 to 40 cases per 100 thousand people [Klimov V.A., 2017; Czaja A.J.; Chang P.E., 2015]. Among these patients, varicose veins of the lower third of the esophagus are observed in 30-40% of patients with compensated LC and in 60% of patients whose liver cirrhosis is in the stage of decompensation [Mosharova A.A. et al., 2012; Ripoll C. et al., 2011]. According to A.G. Scherzinger et al. (2010), F.G. Nazyrova et al. (2015), in individuals with PH and

BVVEaS, the probability of gastro-esophageal bleeding is at least 20-50%, mortality in the development of such GEB in cases with lack or timeliness of medical care reaches 30-80% [Scherzinger A.G. et al., 2010; Nazyrov F.G. et al., 2015].

The only radical method of treating portal hypertension of cirrhotic origin and, consequently, hemorrhagic complications of PH is liver transplantation [Lyzikov AN et al., 2014; Svetova E.V. et al., 2018].

However, today, around the world, the needs of the population for medical care of this kind remain much higher than the real capabilities of transplant services. So, for example, according to S.V. Gauthier and S.M. Khomyakova (2019), in Russia from January to December 2018, the total number of liver transplants performed was 505, while 1830 recipients with an expected waiting period of at least 3.6 years were registered on the waiting list for the same period [Gauthier S. AT. et al., 2019].

Therefore, in situations related to the need for treatment and prevention of bleeding from BVVEaS associated with PH and liver cirrhosis, palliative techniques remain relevant, the most popular of which include endoscopic hemostasis technologies (ligation,

sclerotherapy and adhesive compositions), transhepatic percutaneous obliteration of extra-organ veins of the stomach and transjugular intrahepatic portosystemic bypass (TIPS), surgical separation of the portal system from the pool of unpaired and semi-detached veins using the methods of M. Sigiura and S. Futagawa, E. K. Tanner, M. D. Paciora (who proposed in 1971 a modified version of the operation of E. K. Tanner, simpler technically and requiring less time) [Clinical recommendations..., 2015]. One of the leading criteria for the effectiveness of palliative care is the quality of life [Kulkova V. Yu. et al., 2018].

The purpose of this research was to compare the quality of life of patients of different genders and ages in the long-term period after endoscopic and surgical treatment of bleeding from varicose veins of the esophagus and stomach.

MATERIALS AND METHODS

In this study volunteered 265 men and 73 women aged from 20 to 50 years, who in the period from January 2014 to December 2019 were hospitalized in the surgical departments of the Samarkand branch of the Republican scientific center of emergency medical aid (SBRSCEMA) and the Republican scientific center of emergency medicine (RSCEM) about active ongoing bleeding from varicose veins of esophagus and stomach, although it first appeared on the background of the syndrome of portal hypertension and liver cirrhosis.

To achieve this goal, all participating patients were divided into 2 groups. Patients from group 1 (n=162) were stopped bleeding by endoscopic ligation (EL) of problematic veins (with the imposition of two to six ligatures) and/or endoscopic sclerotherapy (ES, with para - and/or intravasal administration of 0.5-3% ethoxysclerol, thrombovar or fibro-vane).

In group 2 (n=176), traditional treatment was performed, the scheme of which included the installation of an obturator probe, and the operation of asigo-portal separation by the method of M. D. Paciora. The distribution of patients by gender and age is shown in table 1.

Table 1: Characteristics of Study Participants by Age and Gender

Groups of patients	The age range, the absolute number of participants				
	22-25	26-30	31-40	41-45	46-50
№1 n=162	Men				
	19	14	50	20	23
	Women				
№2 n=176	4	6	7	2	17
	Men				
	21	15	56	22	25
Women					
3	7	6	1	19	

Quality of life (QoL) was analyzed using the short form MOS (Medical Outcomes Study, General Health Questionnaire) developed by J.E. Ware et al. (2000) and received the author's name "Medical Outcomes Study - Short Form-36".

The survey was carried out 3 months after endoscopic intervention in group No. 1 and surgical treatment according to the method of M.D., Paciora in group No. 2, then at the end of the first, second and third years of the observation period.

Data on the quality of life when applying to the hospital were received before discharge, patients who agreed to evaluate their health at the time of hospitalization in retrospect. In addition, at our request, 146 healthy volunteers answered questions SF-36 (control group No. 3).

Assessment of the quality of life by the SF-36 method involves the consideration of 8 quantitative indicators within 8 corresponding measurement scales.

Among them: 1) physical functioning (PF), 2) role-based functioning due to physical condition (RP), 3) pain intensity (BP); 4) general health status (GH); 5) vital activity (VT); 6) social functioning (SF); 7) role-based functioning due to emotional state (RE); 8) self-esteem of own psychological health (MH). The unit of measurement for each of these parameters is the transformed amount of QoL points, the calculation of which is performed according to the following formula:

$$\text{Transformed QL score} = [\Sigma - \text{Min}] / [\text{Max} - \text{Min}] * 100$$

where, Σ is the sum of the raw points of the scale (points credited for one or another version of the answer noted by the respondent); Min - the lowest possible scale value; Max - the maximum possible value of the scale [Ware J.E. et al., 2000].

The transformed total QoL score equal to 100 corresponded to "... the complete absence of restrictions or health disorders ..." [cit. by J.E. Ware et al. 2000].

RESULTS AND DISCUSSION

The results of the survey of practically healthy men and women of different ages testified to a rather high level of quality of life for all considered QoL criteria.

For these respondents, the value of the transformed scores always ranged from 93 to 97 within the PF and RP scales (reflecting the ability to transfer normal and increased physical activity and the influence of physical condition on the performance of their duties at home and at work), was 93-100 for the BP indicator (characterizing the effect of pain on physical, role and social activity), was at least 85-93 for the parameters GH, VT, SF and MH (reflecting the general state of health in the personal opinion of the respondent, life activity, opportunities for social functioning and self-esteem of one's own psychological health, respectively), and no less than 79-86 for the RE criterion (the influence of the emotional state on the performance of one's home and office duties).

Before treatment, in all patients from groups No. 1 and No. 2, the measurement results on all SF-36 scales were statistically significantly 2-4.5 times lower than those in the control group. We give the statements of the respondents that were most often found in the completed questionnaires:

- 1) "my health condition is poor (or mediocre), and it is much worse than a year ago";
- 2) "the performance of physical exertion, even such as washing yourself and getting dressed, is now significantly limited";
- 3) "due to the poor physical and emotional state, I do not perform official and household duties in full, reduce the time for them, constantly make additional efforts, perform work worse than before";
- 4) "my poor physical and emotional state has strongly (or very much) all this time (ie, from the beginning of deterioration to treatment) interferes with my communication with family, friends, neighbors, in a team";
- 6) "all this time I have been experiencing physical pain, which prevents me from doing homework and performing official duties";
- 7) "there is always a feeling of depression, sadness, fatigue, exhaustion";
- 8) "I think that I am more prone to diseases than others and my health will only worsen in the future."

After 3 months the EL and / or ES of the problematic varicose nodes and until the end of the first year of the observation period, a sufficiently high QoL level was determined in 22-25-year-old men from group No. 1 (shown graphically in Figure 1): all indicators had no statistically significant differences from the measurement results in the control group.

Among the answers to the questions of SF-36, the following statements prevailed: "At present my health is good / excellent, I feel much better than before", "My health condition does not limit me when I do physical work, except for running, weight lifting, exercise power sports "; " My physical and emotional state does not bother me when communicating with other people, performing household, official and public duties "; " I (now) do not experience physicalPain", "All the time (most of the time) I feel cheerful, calm, there is no feeling of depression, exhaustion,

etc.", "My health is not worse than that of my friends, I do not think that it will deteriorate."

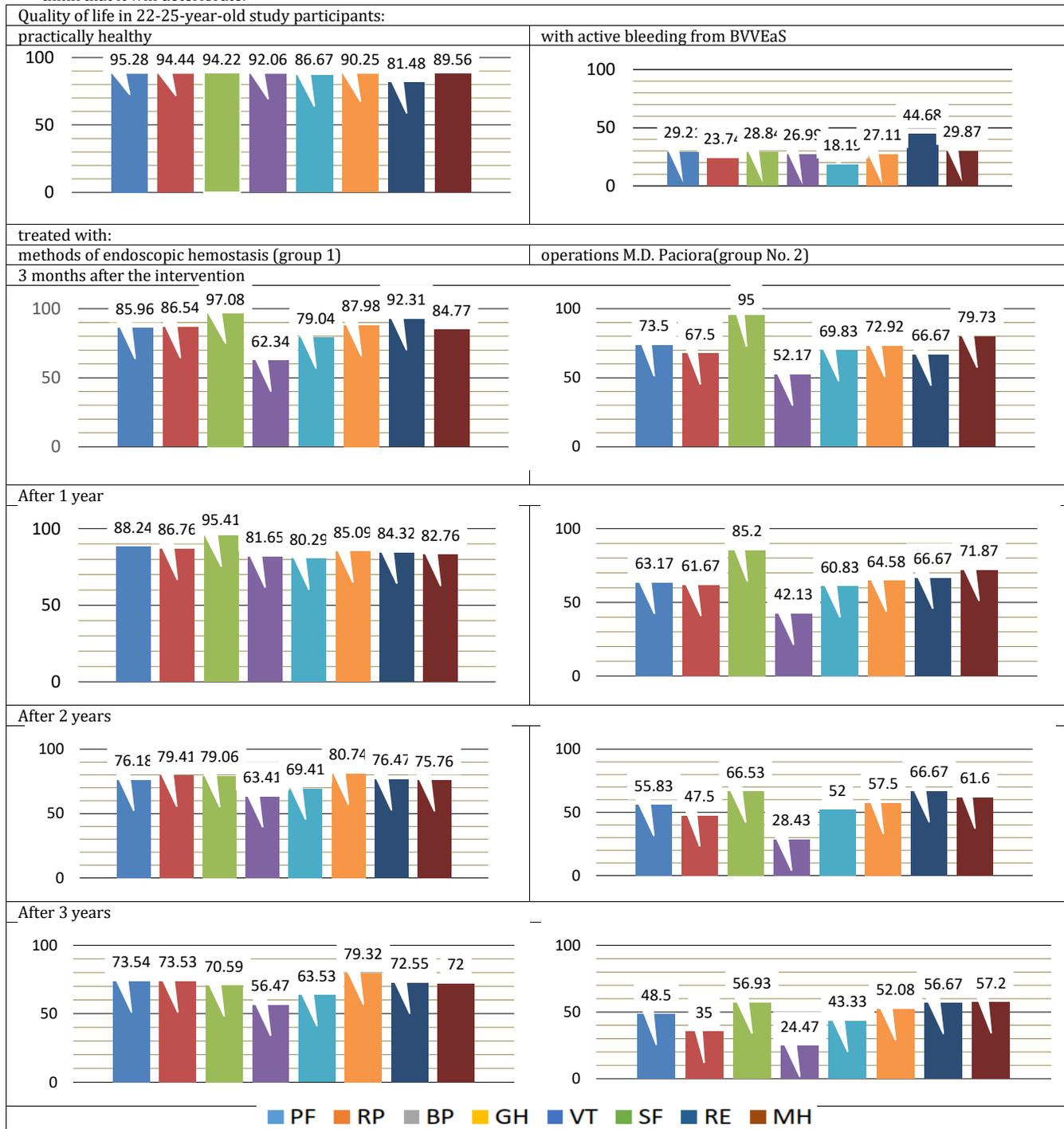


Figure 1: Quality of life in 22-25-year-old men in the long-term period after emergency treatment of bleeding from varicose veins of the esophagus and stomach using endoscopic ligation and / or sclerotherapy (group 1) and surgical intervention using the method of M. D. Paciora

Later, when the survey was conducted at the end of the second and third years of monitoring, the respondents showed certain signs of a decline in their life satisfaction. When choosing answers, 22-25-year-old participants in group 1 began to give preference to such options as "additional effort was required when doing work or other things", "I felt tired most of the time",

"I think I am more prone to diseases than other people", "my health is somewhat worse now than a year ago", etc. As a result, QoL values calculated 2 and 3 years after endoscopic treatment of HEC. they were 15-30% lower than the results of similar measurements carried out at the end of the first year of cure.

As shown in figure 1, at the end of the third postoperative month, 22-25-year-old men who underwent surgical treatment using the method of M. D. Paciora, PF and RP indicators exceeded the baseline level by 2.5 times and 2.8 times, which indicated that the physical and role-based functioning opportunities in patients of group 2 at this stage increased. The marked values of PF and RP were the highest for these parameters during the three-year observation period. At the end of the first year, the values of PF and RP decreased by 14% and 8%, respectively, and continued to decrease in the future. In the last survey, self-esteem on the PF and RP scales was 1.5-2 times lower than in group 1, and 2-2.5 times lower than in the control group.

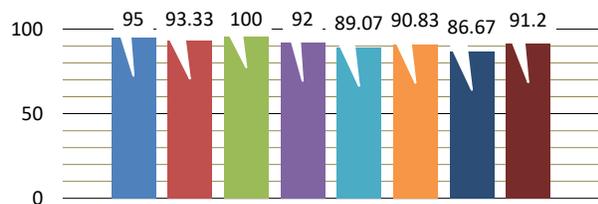
Features of the dynamics of PF and RP indicators (an increase in self-esteem 3 months after surgery, followed by a sequential decrease in SF-36 parameters) also occurred for BP, GH, VT, SF, RE and MH gradations. At the end of the third month, their calculated values exceeded the results of preoperative measurements by 2-4 times, then decreased and in 3 years became 2-3, 8 times lower than the control values and values of QoL parameters obtained during the final survey in group 1 (Fig. 1). In men aged 26-30 years, changes in QoL in the long-term period after endoscopic and surgical treatment were generally similar to those for men aged 22-25 years from groups 1 and 2, respectively.

As shown in figure 2, the values of PF, RP, BP, GH, VT, SF, RE and MH were within 80-92 points in male patients aged 31-40 years

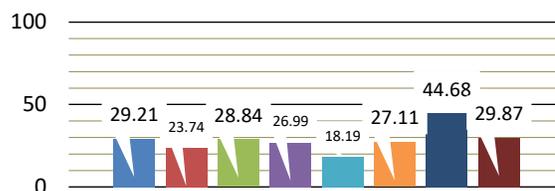
of group 1 at 3 and 12 months after endoscopic ligation and/or sclerotherapy and did not significantly differ from the results of similar calculations in healthy men, as well as in men from group 1 aged 22-25 and 26-30 years at the same monitoring stages. In the next 2 years, there was a tendency to decrease the levels of physical and role functioning due to physical condition (PF and RP scales) and pain intensity (BP), self-assessment of their condition and treatment prospects (GH), and vital activity (VT). At the end of the second year, these indicators were 10.6-22.6% less than the results of the corresponding measurements made one year earlier, at the end of the third year - 16.3-30.1%. However, over the last 2 years of curation, 30-41-year-old men in group 1 still did not show statistically significant differences with the results of measurements in practically healthy individuals for such criteria as SF, RE and MH, which indicated that the patients' social activity remained at a high level, success in daily activities, and the absence of anxiety-depressive experiences (Fig. 2). At the end of the second and third years of follow-up, QoL indicators were 5-15% lower than in patients of the same group at the age of 31-40 years old.

In 31-40-year-old men from group 2 in the long-term period after surgery, the highest level of quality of life was observed at the end of the third postoperative month, when the values of PF, RP, BP, GH, VT, SF, RE, and MH were increased 2-4 times compared to the data before surgery, although they remained 15-46% less than SF-36 in healthy people.

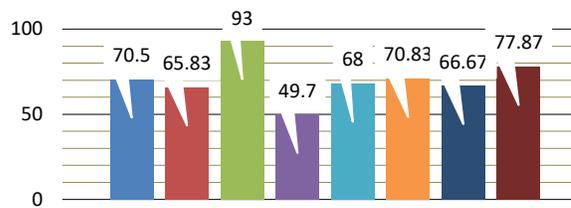
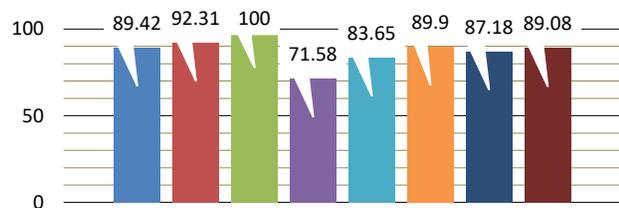
Quality of life in 31-40-year-old study participants: practically healthy



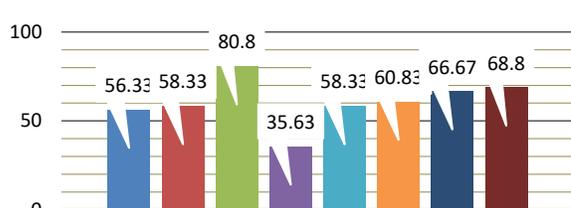
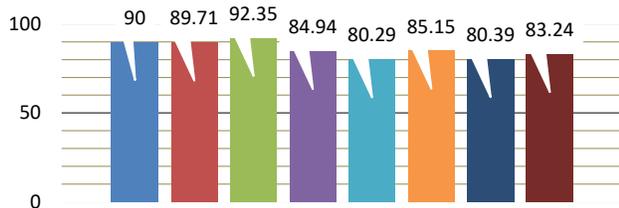
with active bleeding from BVVEaS



treated with the use of:
methods of endoscopic hemostasis(group 1) operations of M. D. Paciora(group 2)
3 months after the intervention



After 1 year



After 2 years

LIFE QUALITY OF PATIENTS WITH HEMORRHAGIC COMPLICATIONS OF PORTAL HYPERTENSION IN THE REMOTE PERIOD AFTER ENDOSCOPIC AND SURGICAL TREATMENT

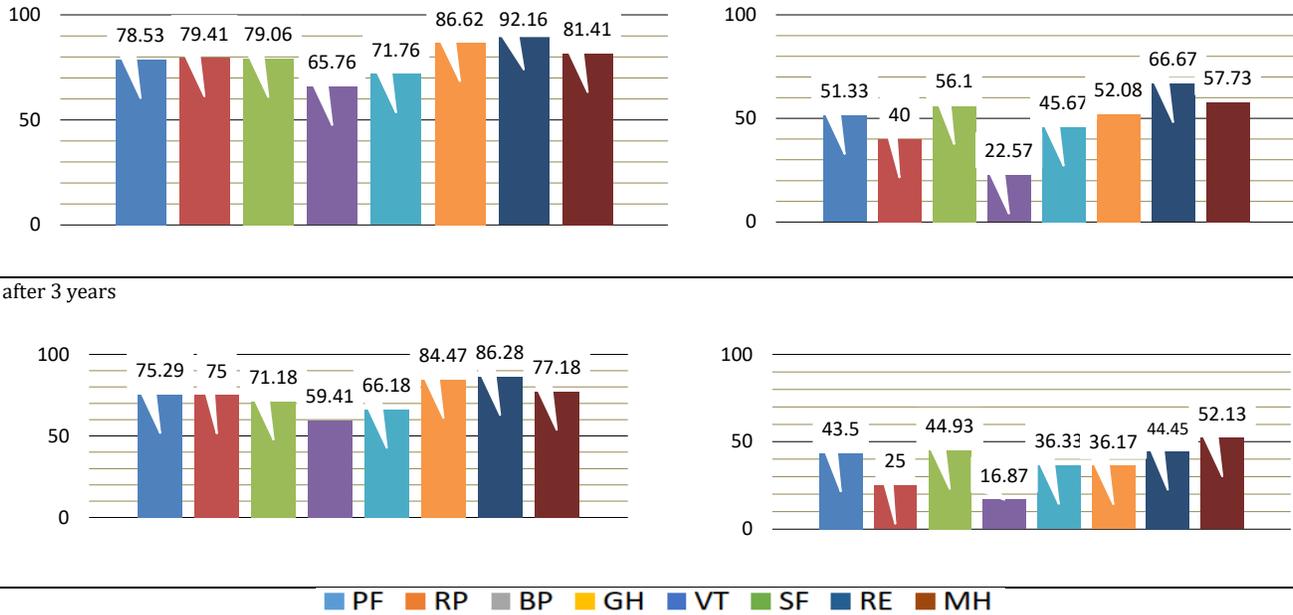


Figure 2: Quality of life in 31-40-year-old men in the long-term period after emergency treatment of bleeding from varicose veins of the esophagus and stomach using endoscopic ligation and / or sclerotherapy (group 1) and surgical intervention by the method of M.D Paciora.

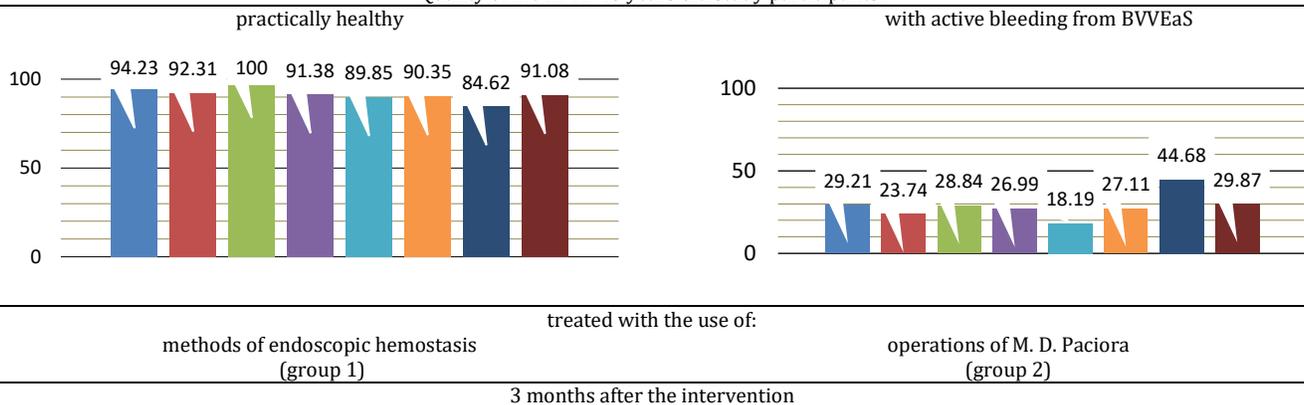
In the future, from stage to stage, there was a gradual decrease in the level of QoL. By the final test, the ability of role functioning depending on physical condition (RP) and self-assessment of their health status (GH) decreased to levels that did not significantly differ from those before the operation, and the criteria for physical and social functioning due to physical condition and pain level (PF, BP, SF), vital activity (VT) and psychological health (MH) were only 1.3-1.8 times higher than the data of the corresponding measurements at admission to the hospital. In 22-25-year-old men who underwent M. D.Pacioras surgery, the quality of life was higher in the long-term period after the intervention, however, the best results were obtained in the main group # 1.

The results of determining the quality of life in 41-45-year-old study participants from groups 1 and 2 are shown in figure 3. After applying EL and / or ES, as well as in cases when patients were aged 22 to 40 years: 1) after 3 and 12 months, all calculated values of SF-36 were fully comparable with those in healthy people ($p < 0.05$); 2) in the future, the levels of SF and RE no

longer changed; 3) for the parameters PF, RP, BP, GH, VT and MH, in comparison with the results 12 months after the first episode of GEB, a decrease was registered: at the end of the second year - by 8-20% ($p < 0.05$), at the end of the third year - by 15-27% ($p < 0.05$). In the final survey, the indicators of PF, RP, BP, GH, VT and MH in men aged 41-45 years from the main group # 1 were statistically significantly less than the control values by 17-33%. 41-45-year-old women in group 1 had similar changes in SF-36 indicators.

According to the data illustrated in figure 3, 3 months after surgery in men 41-45 years of age from group 2 for all values of SF-36 were marked, on average, two-three-fold growth, the values of indicators reached 45.83-74.80 units of account ($p < 0.05$), however, in the future there was only a statistically significant, consistent, from stage to stage, decrease in all criteria of SF-36. At the end of the planned follow-up period, the difference between PF, RP, BP, GH, VT, SF, RE, and MH measured in healthy volunteers and in 41-45-year-old patients in group 2 was 30-84%.

Quality of life in 41-45 years old study participants:



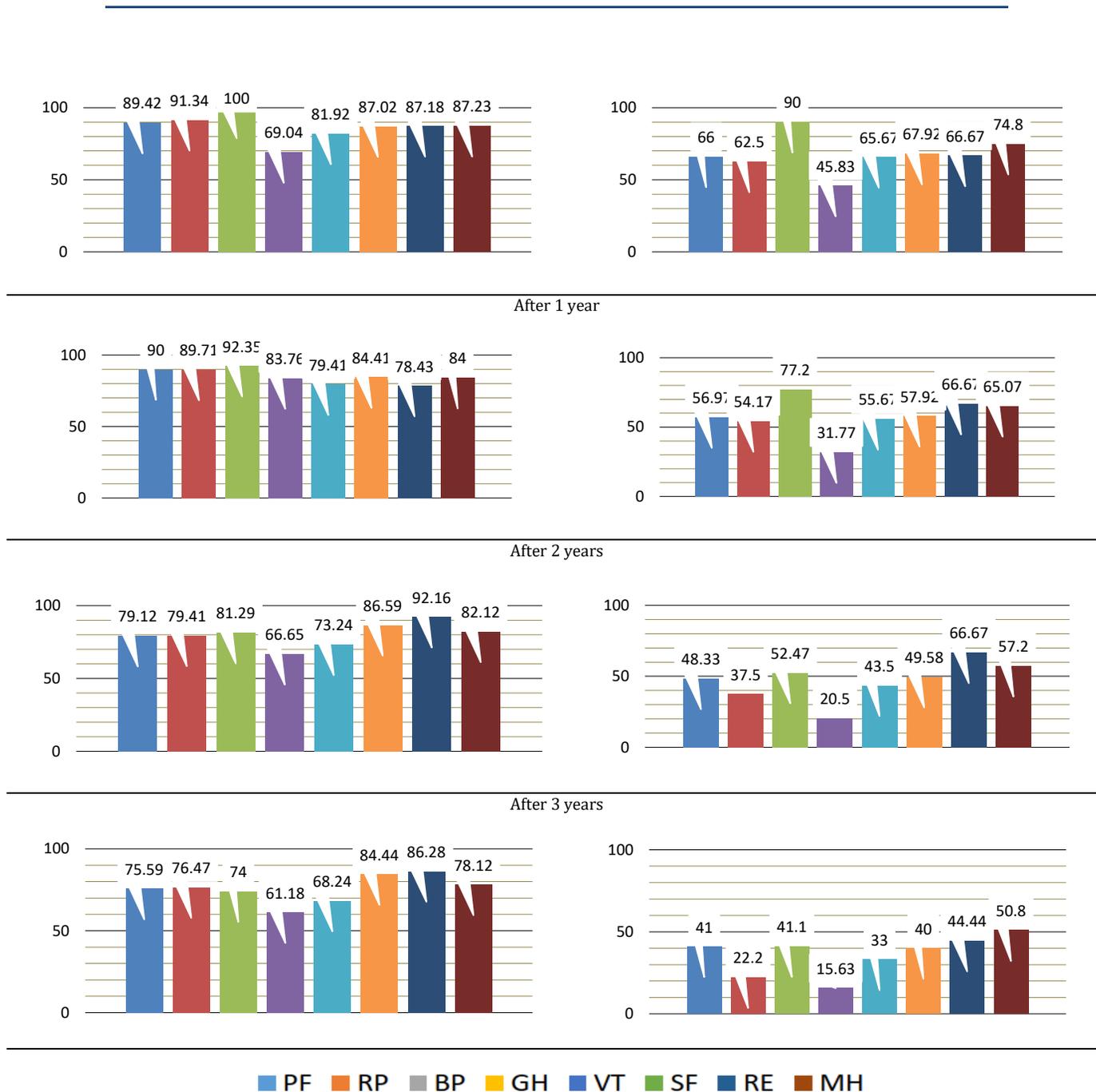


Figure 3: Quality of life in 41-45-year-old men in the long-term period after emergency treatment of bleeding from varicose veins of the esophagus and stomach using endoscopic ligation and / or sclerotherapy (group 1) and surgical intervention using the method of M. D. Paciora.

Figure 4 shows the results of calculations of SF-36 parameters in patients aged 46-50 years from groups 1 and 2.

In 46-50-year-old men from the main group #1 at the end of the third month after endoscopic ligation and / or sclerotherapy, as well as at the end of the first postoperative year, the levels of PF, RP, BP, GH, VT, SF, RE and MH had no statistically significant differences with the corresponding indicators in practically healthy 46-50-year-old men. After 2 years from the beginning of observation, the first signs of a tendency to deterioration in the quality of life appeared, which were expressed in a decrease in the values of PF, RP, BP, GH, VT to levels lower than in the control

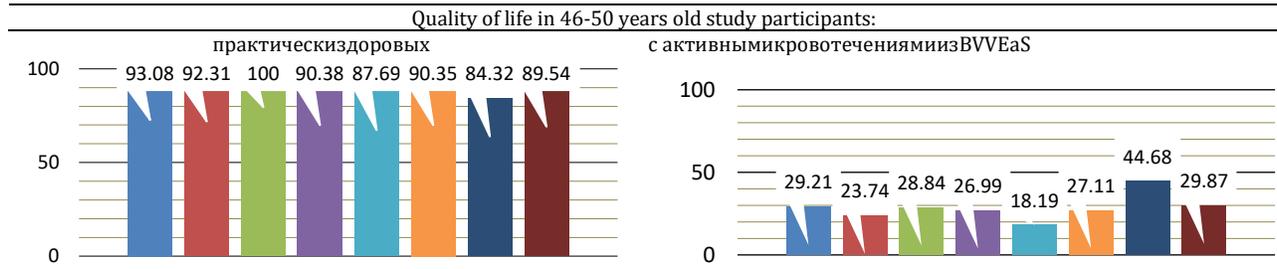
group by 15-26%. Further, at the end of the third year of cure, the marked parameters decreased by another 4-29%, and an additional decrease in MH was registered to 75.76±2.46 (89.54±11.68 in healthy 46-50-year-old men).

When comparing data obtained in the determination of QoL of men aged 46-50 years group №1 with those in patients of the same age group 22-25, 26-30, and 31-40 40-45 years, was marked, first, in General, comparable results of the questionnaire performed after 3 and 12 months from the start of observation; secondly, the presence of statistically significant differences between the SF-36 in patients considered age categories for this

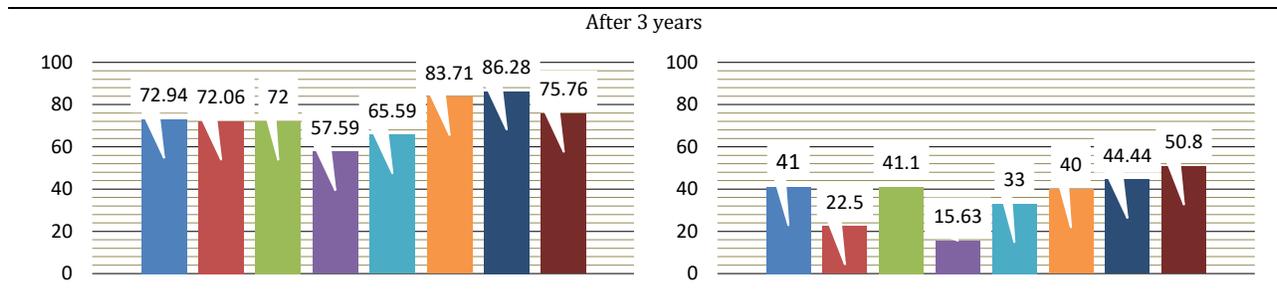
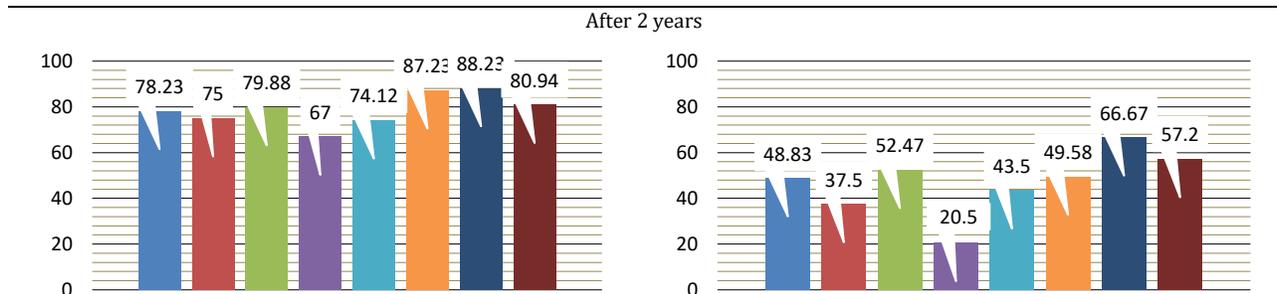
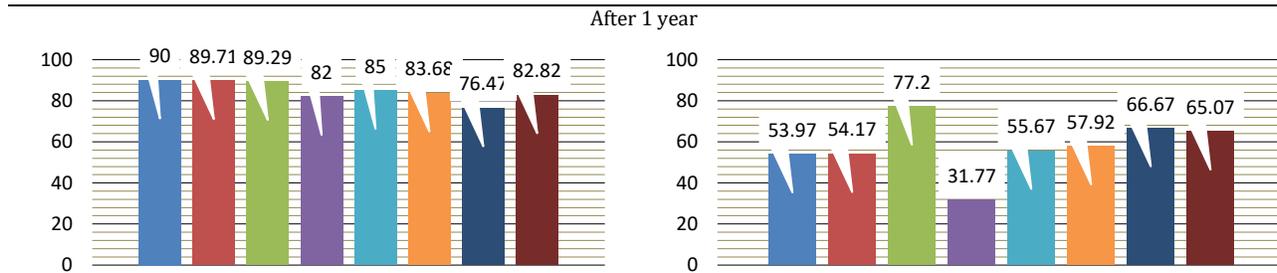
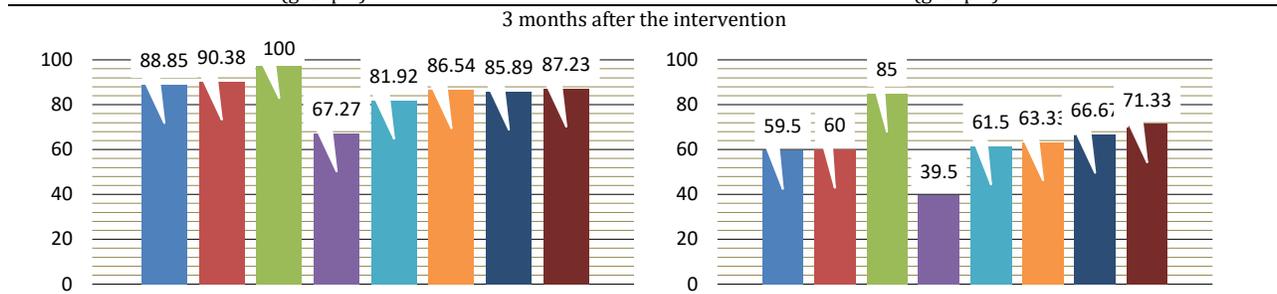
LIFE QUALITY OF PATIENTS WITH HEMORRHAGIC COMPLICATIONS OF PORTAL HYPERTENSION IN THE REMOTE PERIOD AFTER ENDOSCOPIC AND SURGICAL TREATMENT

test, the end of the second and third year of monitoring. These differences were as follows: after 2 and 3 years after endoscopic

treatment, the calculated values of SF-36 in 22-25 -, 26-30-and 46-50-year olds.



Treated with the use of:
 methods of endoscopic hemostasis (group 1) operations of M. D. Paciora (group 2)



■ PF ■ RP ■ BP ■ GH ■ VT ■ SF ■ RE ■ MH

Figure 4: Quality of life in 46-50 year old men in the long term after emergency treatment of bleeding from varicose veins of the esophagus and stomach using endoscopic ligation and / or sclerotherapy (group No. 1) and surgical intervention according to M.D. Paciara

Men from the main group No. 1 were statistically significantly lower than those in 31-40- and 41-45-year-old patients, by about 1.1-5.9% for people aged 46-50 years and 2.7- 17.0% for men 22-30 years of age.

In male patients aged 46-50 years and undergoing surgery M.D. Paciara, 3 months after the intervention, all SF-36 indices were statistically significantly higher than the preoperative level 2.5-3.5 times, while remaining less than the control values by 15-56% ($p < 0.05$). Subsequently, during subsequent tests, the values of each of the SF-36 parameters gradually decreased and at the end of the third postoperative year, the values of PF, BP, VT, SF, RE and MH became 1.8-2.7 times less than the corresponding control values ($p < 0.05$), RP - 4.2 times ($p < 0.05$), GH - 5.8 times ($p < 0.05$). When comparing the questionnaire data for men from group No. 2, who were in different age categories, a certain dependence was observed on the age of the patients: the best results were obtained in 22-25-year-old study participants, the lowest - in people aged 46-50 years.

In women aged 22-25, 26-30, 31-40, 41-45, and 46-50 years from groups No. 1 and No. 2, changes in QoL at all stages of the study were generally similar to those for men of the corresponding age from groups No. 1 and No. 2.

Thus, by the end of the third month after the application of EL and / or ES in all patients of group No. 1, the normalized QoL indicators were normalized. At this level, which is completely comparable with that for practically healthy people, the SF-36 parameters remained until the end of the first year of monitoring, then there was a slight decrease in indicators. The severity of the noted changes did not depend on the gender of the study participants, however, there was a relationship between age and SF-36 parameters 2 and 3 years after endoscopic intervention: the best results were obtained in 31-40- and 41-45-year-old patients. the worst - in patients aged 22-25, 26-30 and 46-50 years.

In men and women operated on by the method of M.D. Paciara, at the end of the third month, SF-36 values increased 2-4 times in relation to the results of preoperative measurements, however, they remained 15-56% lower than the control values. Further, the negative dynamics of a sequential decrease in the studied QoL parameters was recorded to values smaller than in practically healthy individuals by 1.5-6.0 times. The severity of negative changes increased with increasing age of patients.

CONCLUSION

The use of endoscopic ligation and / or sclerotherapy in order to stop bleeding from varicose veins of the esophagus and stomach in patients of different sex and age provides for at least three years a higher level of quality of life compared to that after the operation of azigo-portal separation according to the method M.D. Paciara.

Authors participation: research concept and design, editing – R.N. Kadirov, research concept and design, material collection, processing, writing text – F.A. Khadjibaev

The authors declare no conflict of interest.

REFERENCES

1. Beloborodov V.A., Kozhevnikov M.A., Kelchevskaya M.A., Oleinikov I.Yu., Frolov A.P. Esophageal hemorrhagic syndromes // *Acta Biomedica Scientifica*. - 2019.-- No. 4 (3). - S. 81-88.
2. Gauthier S.V., Khomyakov S.M. Organ donation and transplantation in the Russian Federation in 2018. XI

- message of the register of the Russian Transplant Society // *Bulletin of transplantology and artificial organs*. - 2019-- T.XXI, No. 3. - S. 7-32.
3. Klimov V.A. Cirrhosis of the liver / V.A. Klimov // *Handbook of a general practitioner*. - 2017. - No. 12. - S. 4-18.
4. Clinical recommendations for the treatment of bleeding from varicose veins of the esophagus and stomach / *Gastrointestinal bleeding: a collection of teaching materials "School of Surgery Rox"*. - M., 2015-- S. 8-38.
5. Kulkova V.Yu., Grigoryeva N.S., Chubarova T.V. The effectiveness of palliative care in the Russian Federation: a methodological approach and assessment experience // *national interests: priorities and security*. - 2018.- T.14, no. 10. - S. 1782-1796.
6. Mosharova A.A. Treatment and prevention of bleeding from varicose veins of the esophagus / A.A. Mosharova, A.L. Vertkin // *Emergency therapy*. - 2012. - No. 1. - S. 12-19.
7. Lyzikov A.N., Skuratov A.G., Prizentsov A.A. Modern surgery of portal hypertension: from classic to innovative technologies. // *Problems of health and ecology*. - 2014. - No. 1. - S. 57-62.
8. Nazyrov F.G., Devyatov A.V., Babadjanov A.Kh. Summary analysis of the results and competitive prospects of portosystemic shunting in patients with cirrhosis of the liver // *Ann. surgeon. hepatology*. - 2015. - No. 20 (2). - S. 31-40.
9. Patient M.D. Surgery of portal hypertension. - 2nd ed., Ext. / M. D. Patsiora. - Tashkent: Medicine, 1984. - 319 p.
10. Svetova E.V., Sapronova N.G., Katelnitskiy I.V. Opportunities for helping patients with cirrhosis complicated by portal hypertension // *Medical Bulletin of the South of Russia*. - 2018. - No. 9 (1). - S.6-16.
11. Khoronko Yu.V. TIPS (transjugular intrahepatic portosystemic shunting) and treatment of varicose gastrointestinal bleeding / Yu. V. Khoronko, MF Cherkasov, M.I. Polyak, Yu. E. Baranov. - M., 2013. -- 242 p.
12. Scherzinger A.G., Zhigalova S.B., Melkumov A.B., Manukyan V.G. Varicose veins of the stomach in patients with portal hypertension: diagnosis and treatment. // *Ann. surgeon. hepatology*. - 2010. - No. 15 (3). - S. 84-94.
13. Oettinger O.A. Modern approaches to the diagnosis and treatment of portal hypertension syndrome // *Gastroenterology*. - 2012. - No. 4. - S. 30-37.
14. Chang P.E. Epidemiology and Clinical Evolution of Liver Cirrhosis in Singapore / P.E. Chang [et al.] // *Ann. Acad. Med. Singapore*. 2015. - Vol. 44. - P. 218-225.
15. Czaja A.J. Hepatic inflammation and progressive liver fibrosis in chronic liver disease / A.J. Czaja // *World J. Gastroenterol*. - 2014.-- Vol. 20. - P. 2515-2532.
16. Ripoll C. Should the Hepatic Venous Pressure Gradient Be Sequentially Measured to Monitor B-Blocker Therapy in the Prophylaxis of Variceal Hemorrhage? / C. Ripoll, R. Tandon, G. Garcia-Tsao // *Controversies in hepatology: The experts analyze both sides* horofare: SLACK Incorporated. - 2011. - P.123.
17. Ware J.E., Snow K.K., Kosinski M., Gandek B. SF-36 Health Survey. Manual and Interpretation Guide, Lincoln, RI. Quality Metric Incorporated, 2000. - 150 p.