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## CLINICAL AND STATISTICAL ASPECTS OF GASTROINTESTINAL BLEEDING COURSE IN PATIENTS WITH CARDIOVASCULAR SYSTEM PATHOLOGY

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**Ключові слова:** *шлунково-кишкові кровотечі, патологія серцево-судинної системи, Forrest*

**Abstract.** *Clinical and statistical aspects of gastrointestinal bleeding course in patients with cardiovascular system pathology. Trofimov N.V., Kryshen V.P., Barannik S.I., Chukhryenko A.V., Chabanenko G.N., Gayterov A.N. We have collected, processed and analyzed the results of treatment of 329 patients with gastrointestinal bleedings in whom the course of the underlying disease is aggravated by the pathology of the cardiovascular system in Communal institution "Dnipro Clinical Emergency Care Association" of Dnipro City Council» for 2017 year period. First, the frequency of background diseases was determined, chronic pathology being 93.4%. Ischemic heart disease (IHD, cardiosclerosis of various origins (post-infarction, diffuse, atherosclerotic), hypertonic disease (HD) - HD-I, HD-II, HD-III are the most common, while acute cardio-vascular disorders (ACVD), the state after coronary artery bypass surgery, renal artery bypass, arrhythmias, acute myocardial infarction made up 16 (5%), 1 (0.3%), 3 (1%), 1 (0.3%), respectively. Secondly, the quality of endoscopic hemostasis in case of ulcerative bleedings from the stomach, duodenum, gastroenteroanastomosis was evaluated, was assessed by Forrest classification, connecting the results with the accompanying pathology of the cardiovascular system. We found out that active bleeding F I was determined in 24 patients (7.3%), of which F Ia – in 14 (4.3%), F Ib – in 10 (3%). Unstable hemostasis with a high risk of recurrent F II bleeding which was observed in 251 patients, makes up 76.2%, and F III – in 54 (16.5%). The degree of blood loss was directly influenced by drugs – anticoagulants, antiplatelet agents, hypotensive drugs, as well as their combinations, aimed at correcting the rheological properties of blood. Depending on the degree of blood loss, the quality of hemostasis, the general condition of the patient, the treatment tactics for this cohort of patients was determined. 313 patients received conservative treatment, which made up 95.1%. 16 patients were operated. Postoperative mortality is 12.5%. The overall mortality of the above cohort is 10%.*

**Реферат.** *Клініко-статистичні аспекти перебігу шлунково-кишкових кровотеч у хворих з патологією серцево-судинної системи. Трофімов М.В., Кришень В.П., Баранник С.І., Чухрієнко А.В., Чабаненко Г.М., Гайтеров А.М. Нами зібрані, оброблені і проаналізовані результати лікування 329 хворих зі шлунково-кишковими кровотечами в Комунальному закладі «Дніпровське клінічне об'єднання швидкої медичної допомоги» Дніпровської міської ради» у період за 2017 рік, у яких перебіг основного захворювання ускладнений патологією серцево-судинної системи. По-перше, визначена частота фонових захворювань - хронічна патологія становить 93,4%. Найчастіше зустрічається ішемічна хвороба серця (ІХС), кардіосклерози різного генезу (постінфарктний, дифузний, атеросклеротичний), гіпертонічна хвороба (ГХ) - ГХ-I, ГХ-II, ГХ-III, тоді як гострі порушення мозкового кровообігу (ГПМК), стан після аортокоронарного шунтування, а також шунтування ниркових артерій, аритмії, гострий інфаркт міокарда становили 16 (5%), 1 (0,3%), 3 (1%), 1 (0,3%) відповідно. По-друге, оцінили стан ендоскопічного гемостазу при виразкових кровотечах зі шлунка,*

дванадцятипалої кишки, гастроентероанастомозу, котру визначили за класифікацією Forrest, пов'язавши при цьому результати із супутньою патологією серцево-судинної системи. Ми виявили, що активна кровотеча F I визначалася в 24 осіб і становить 7,3%, серед них F Ia - 14 (4,3%), F Ib - 10 (3%). Нестабільний гемостаз з високим ризиком розвитку рецидиву кровотечі F II, який спостерігався в 251 пацієнта, що становить 76,2%, а F III - 54 (16,5%). На ступінь крововтрати безпосередньо впливали препарати - антикоагулянти, антиагреганти, гіпотензивні, а також їх комбінації, спрямовані на корекцію реологічних властивостей крові. Залежно від ступеня крововтрати, якості гемостазу і загального стану визначили лікувально-діагностичну тактику цієї когорти хворих. Консервативне лікування отримали 313 пацієнтів, що становило 95,1%. Прооперовано 16 пацієнтів. Післяопераційна летальність становить 12,5%. Загальна летальність вищезазначеної когорти хворих - 10%.

The problem of gastrointestinal bleedings (GIB) in patients with pathology of the cardiovascular system, especially ACVD, acute myocardial infarction, arrhythmias of various origins remains one of the important problems of Ukraine's health care due to the fact that extent and severity of the consequences of gastrointestinal bleedings have social and economic value.

Recently, an increase in the number of acute gastrointestinal bleedings of stages I-IV has been observed, especially in patients with pathology of the cardiovascular system.

Despite modern methods of treatment using methods of endoscopic hemostasis and prevention of recurrence of bleeding, mortality of the above cohort of patients, according to many authors, such as Bereznitsky Y.S., Shepetko E.N., Boyko V.V., Mishalov V.G., Iwamoto J., is 10-12% [1, 9].

The purpose of the study is to determine the characteristics of gastrointestinal bleedings in patients with concomitant cardiovascular pathology when choosing a treatment and diagnostic tactic.

#### MATERIALS AND METHODS OF RESEARCH

Having analyzed the dynamics of gastrointestinal bleedings in patients with pathology of the cardiovascular system, including acute myocardial infarctions, acute cardio-vascular disorders, conditions after coronary artery bypass surgery, bypass of the renal arteries, arrhythmias of various genesis, we found out that over 2017 year's period in CI "Dniepr CECA "DCC" 329 people were treated, of which 197 (59.8%) – male patients, 132 (40.2%) – females. The data divided them into two groups: I - patients who received standard antihypertensive therapy (n=284), II – “double” therapy (n=45). The average age was 67 years. The oldest patient was 98 years old, the youngest was 21 years old.

The processing was carried out using statistical programs and methods: general clinical – esophagogastroduodenoscopy (EGD) with the definition of localization, size and condition of local hemostasis; laboratory methods – general blood count – hemoglobin, red blood cell count, color index, hematocrit; methods of statistical data processing and their analysis – the criterion of reliability (p)

(Student's test) using Microsoft Access 2010, Microsoft Excel 2010 software.

#### RESULTS AND DISCUSSION

Medical records of inpatients over 2017 year period were analyzed. It was established that out of 329 patients treated, 125 (38.1%) suffer from gastric ulcer complicated by bleeding, 163 (49.5%) – duodenal ulcer 1 (0.3%) – gastric ulcer and duodenal ulcer, peptic ulcer of gastroenteroanastomosis was found in 9 (2.7%) patients, in 27 (8.2%) Mallory-Weiss syndrome was found, in 3 (0.9%) source of gastrointestinal bleeding was not detected, and 1 (0.3%) patient suffers from Kay's ulcer complicated by bleeding. That is, the most common is duodenal ulcer, making up 49.5%.

Patients are being delivered to the CI "Dniepr CECA" DCC " throughout the year and this process is often not seasonal. So, V.V. Skvortsov, A.V. Tumarenko in their course of lectures on "Clinical Gastroenterology" stated that gastrointestinal bleeding, as a complication of gastroduodenal ulcers, develops acutely and often with atypical clinical manifestations (latent picture of exacerbation, lack of seasonality and periodicity). [7] We found that in 2017 there was a slight increase in the number of patients with GIB, whose history is aggravated by the pathology of the cardiovascular system, in the period August-September — 75 patients, which is 22.8%, and in December — 15 patients, that is 4.6% of total admissions.

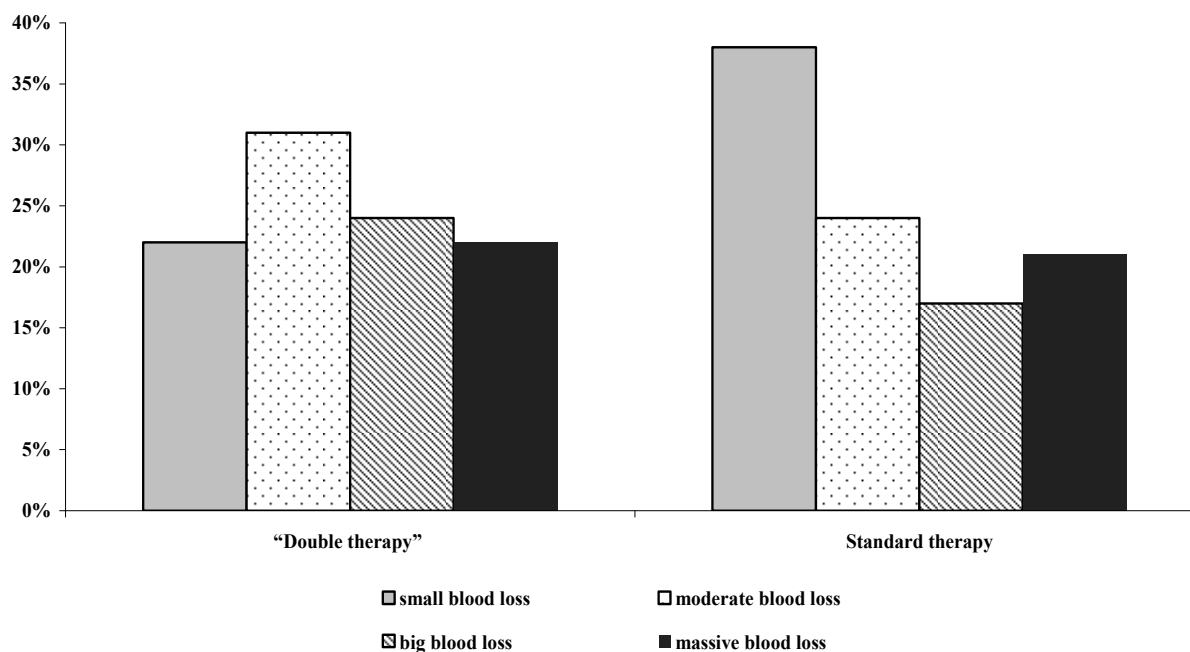
When analyzing the dependence of comorbidities and the severity of blood loss, it should be noted that in patients with gastrointestinal bleedings who suffer from cardiovascular pathology, large and massive blood loss was observed in 59 (18%) and 70 (21%), respectively, a moderate degree was observed in 82 patients (25%), whereas, for a number of reasons, a mild degree of bleeding was detected in 118 patients and was 36%.

Influence and choice of drugs for the treatment of cardiac pathology have an influence. Thus, in patients who took “double” therapy, which includes direct or indirect anticoagulant, or warfarin respectively, the antiplatelet agent and the hypotensive component — antitensin-converting enzyme

inhibitors, beta-blockers, calcium channel blockers, sartans, and statins, massive blood loss was observed, while in patients taking classical antihypertensive therapy, which included inhibitor of anti-transforming enzyme, beta-blocker, calcium channel blocker, diuretic – the degree of blood loss ranged between mild and moderate.

In patients of the group II who took “double” therapy (n=45), II degree of blood loss was observed more often – in 14 (31.11%±6.90), III – in 11

(24.44%±6.41), IV – in 10 (22.22%±6.20), I – in 10 patients (22.22%±6.20). In the group of patients who took standard antihypertensive therapy (n=284), in most cases the first degree of blood loss was determined – in 108 (38.03%±2.88), II – in 68 (23.94%±2.53), III – in 48 (16.9%±2.22), IV – in 60 (21.13%±2.42) ( $p \leq 0.01$ ). These results indicate that the use of “dual therapy” leads to an increase in the degree of blood loss compared with standard antihypertensive therapy (Fig. 1).



**Fig. 1. Distribution of indices of the blood loss degree in patients taking “double” and standard anti-hypertensive therapy**

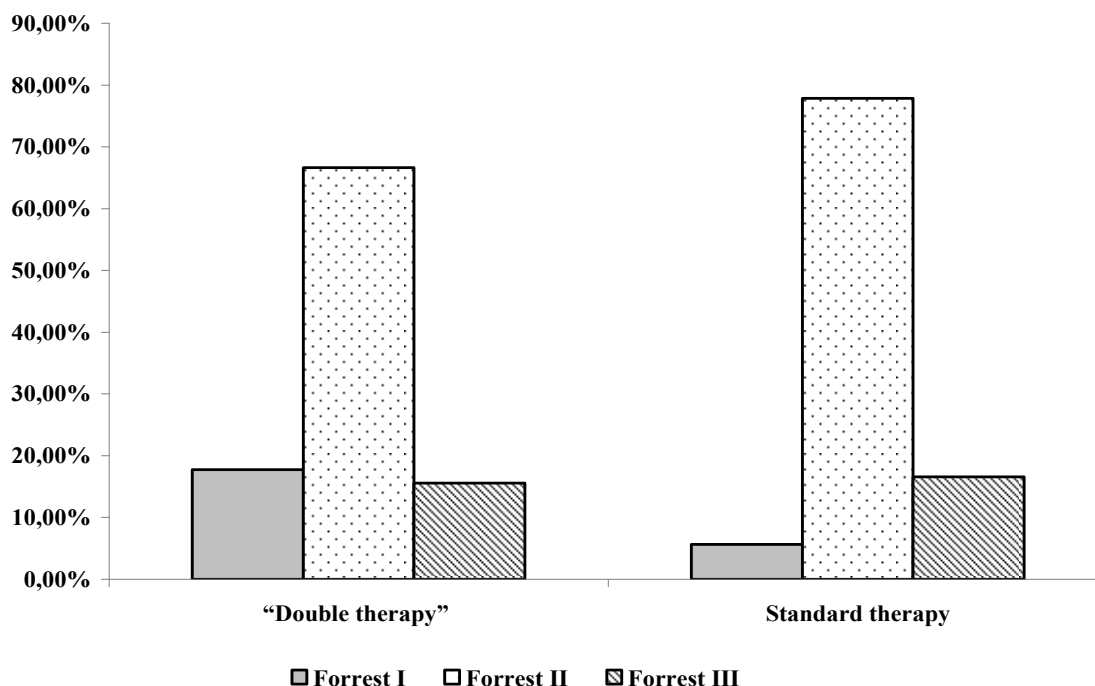
The state of local endoscopic hemostasis of bleeding was evaluated according to Forrest classification [10].

Active bleeding among all cohorts of patients F I was determined in 24 patients – 7.3%, unstable hemostasis with a high risk of recurrence of bleeding F II – in 251 people – 76.2%, and F III – 54 (16.5%).

Patients who take a “double” therapy – 45. Active bleeding F I was determined in 8 people and is 17.78%±5.70, unstable hemostasis with a high risk of recurrent bleeding F II – in 30 (66.67%±7.03) patients, and F III – in 7 (15.56%±5.40).

Patients who take standard antihypertensive therapy – 284. Active bleeding among all cohorts of patients F I was determined in 16 people and makes up 5.63%±1.37, unstable hemostasis with a high risk

of recurrent bleeding F II – in 221 patients (77.82%±2.47), and F III – in 47 (16.55%±2.21). If we talk about active bleeding F I in patients of both groups, the differences are statistically insignificant ( $p \leq 0.17$ ). This result is possible in a small number of the patients studied in the groups. Unstable hemostasis with a high risk of bleeding F II is determined in most cases of group I, who take standard antihypertensive therapy, compared with group II, making up 77.82%±2.47 and 66.67%±7.03. The index of a stable hemostasis F III is less common in patients of group II than in group I, respectively 15.56%±5.40 and 16.55%±2.21 ( $p \leq 0.01$ ). These data indicate the need to improve the diagnostic and treatment tactics of both cardiovascular pathology and the underlying disease (Fig. 2).



**Fig. 2. Distribution of patients taking "double" and standard anti-hypertensive therapy by the index of local endoscopic hemostasis state**

### CONCLUSIONS

1. A high frequency of detection of pathology of the cardiovascular system, among which acute disorders and chronic diseases in patients with gastrointestinal bleeding, plays a crucial role in the choice of diagnostic and therapeutic tactics.

2. In patients of both groups, statistically significant differences are determined – the number of patients in group II ("double" therapy) with large and massive blood loss is 1.2 times higher than in patients of group I (standard therapy).

3. When analyzing the state of local endoscopic hemostasis, the rate of unstable hemostasis with a high risk of recurrence of bleeding in patients of

group 1 is by 11% higher as compared with group II. The index of a stable hemostasis F III in the group 1 is by 1.2 times higher than that of in the group II ( $p \leq 0.01$ ). These results require careful processing when choosing the treatment tactics of the underlying disease and comorbidity. As for the active bleeding index F I, the differences are statistically insignificant ( $p \leq 0.17$ ), and will be further improved.

4. The data obtained in the course of the analysis must be taken into account in the process of diagnostic and treatment tactics for treating this cohort of patients.

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