



Varieties of gastrointestinal bleeding in patients with coronary heart disease

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Abstract

Acute gastrointestinal bleeding (GB) is a complication of diseases of various etiologies, the most significant of which are acute erosive gastritis of medicinal origin, pathology of the cardiovascular system. Particularly relevant is the problem of GB in patients with coronary heart disease. The development of erosive GB in patients with coronary heart disease can also be promoted by taking antiplatelet or anticoagulant drugs, for example, taking maintenance doses of aspirin increases the risk of GB by 1.8 times, clopidogrel-by 1.1 times, the combination of these drugs-by 7.4 times. The prognosis in patients with coronary heart disease, complicated by bleeding of their gastrointestinal tract, is worse, because the coronary reserve decreases, and problems of consequences of coronary catastrophe are aggravated by anemia, inevitable violations of regulation of homeostasis and homeokinesis of Central hemodynamics with violation of nitrogen release function of kidneys, with increase in serum creatinine.

Keywords: ischemic heart disease, NSAID-gastropathy, gastrointestinal bleeding

1. Introduction

Acute gastrointestinal bleeding (GB) is a complication of diseases of various etiologies, the most significant of which are acute erosive gastritis of medicinal origin, pathology of the cardiovascular system [1, 4]. In 80% of cases, GB can stop spontaneously within 12 hours of bleeding. In 20% of cases, GB may recur within 3 days from the onset of the disease and be complicated by posthemorrhagic disorders of Central hemodynamics, up to the development of circulatory shock [2, 5].

Particularly relevant is the problem of GB in patients with coronary heart disease (CHD). The complex of metabolic changes developing in CHD in the form of persistent myocardial ischemia may be complicated by the development of acute gastric and duodenal ulcers. It is also known that up to 30% of cases of myocardial infarction is accompanied by the formation of "gastroduodenal" stress " damage to the mucous membranes (Selye syndrome), with clinically significant GB, with a mortality rate of up to 50-80% of cases [3, 6]. The development of erosive GB in patients with coronary heart disease can also be promoted by taking antiplatelet or anticoagulant drugs, for example, taking maintenance doses of aspirin increases the risk of GB by 1.8 times, clopidogrel-by 1.1 times, the combination of these drugs-by 7.4 times [8].

The prognosis in patients with coronary heart disease, complicated by bleeding of their gastrointestinal tract, is worse, because the coronary reserve decreases, and problems of consequences of coronary catastrophe are aggravated by anemia, inevitable violations of regulation of homeostasis and homeokinesis of Central hemodynamics with violation of nitrogen release function of kidneys, with increase in serum creatinine [2, 8].

Purpose of research - determination of features of gastrointestinal bleeding in patients with coronary heart disease.

Material and methods. 146 patients with coronary heart disease were examined, among them patients with acute myocardial infarction (MI) were – 12 (8,22%), with progressive strenuous angina (PNS) - 68 (46,57%), strenuous angina (NS, functional class III-IV) – 66 (45,21%) people. The average age of patients was 56.3±2.4 years. All patients with clinically established coronary artery disease along with conventional clinical, laboratory and instrumental studies were performed fibro esophagogastroduodenoscopy-EFGDS (FUJINON 2500 and PENTAX5000, Japan), fecal occult blood. Patients with coronary heart disease received conventional therapy, including heparin (bolus, then infusion and subcutaneous injection), aspirin and clopidogrel (loading doses, followed by the transition to maintenance).

Statistical processing was performed in Excel-2017.

Results and discussion

All patients were hospitalized in the department of cardiology due to the destabilization of coronary heart disease. When admitted to the hospital, 56% of patients complained of anginal pain of typical localization, 28% - on abdominal pain of different localization and intensity, 12% - for discomfort and heaviness behind the sternum, 4% - for general malaise and weakness. 52 (36%) patients, in addition to CHD, suffered from concomitant chronic gastrointestinal pathology. The reason for seeking medical help was general malaise, discomfort in the precordial region, pressing pain behind the sternum. ECG of these patients revealed ST segment depression in leads I, aVL, V3—V6 (16%), II, III, aVF (16%), negative t wave in I, aVL, V3—V6 (2,8%), in leads II, III, aVF (12%). Despite receiving a proton pump inhibitor (omeprazole), in the first two days of hospitalization, these patients developed GB, possibly provoked by active anticoagulant and double antiplatelet therapy.

Among all observed CHD patients, 95 (65,06%) patients with acute gastrointestinal bleeding (GB) from the upper gastrointestinal tract (GI) were registered. In 93 (64%) patients, GB developed at a later date (10-11 days of hospitalization). These are patients with AMI, repeated AMI, unstable angina, with severe pain syndrome at admission and ECG changes corresponding to the diagnosis (St segment depression in leads I, aVL, V3-V6-2%; II, III, aVF-4%; pathological tooth Q-29%; negative tooth T in I, aVL, V3-V6-8%; II, III, aVF-10%). When analyzing the presence of anemia in the observed patients with coronary heart disease, mild anemia (Hb 119-90 g/l) was detected in 36 (25%) patients, moderate (Hb 89-96 g/l) — in 81

(55,6%) people, severe (Hb <60 g/l) — in 6 (19,4%) patients. The pathogenetic relationship of anemia (including posthemorrhagic) with CHD is peculiar. The manifestation of hemic hypoxia leads to heavier angina, and the relief of anemia "softens" its course. However, paradoxically, anemia has a positive effect on the course of coronary heart disease, thinning the blood and reducing the risk of coronary thrombosis [3].

In the study of antiplatelet and anticoagulant therapy (table. 1) it was found that 47,26% of patients received clopidogrel and aspirin, 17,8% - one of the drugs (clopidogrel or aspirin) 34,94% - anticoagulant and antiplatelet therapy (heparin, kleksan or, warfarin).

Table 1: The nature of antiplatelet and / or anticoagulant therapy in patients with CVD (abs)

Combined therapy	Number of patients
therapy 1 antiplatelet agents (clopidogrel or aspirin)	26 (17,80%)
Combination therapy with 2 antiplatelet agents (clopidogrel+aspirin)	69 (47,26%)
Combination therapy 3rd (1 anticoagulant + 2 antiplatelet)	51(34,94%)
Total	146 (100%)

According to the data obtained in 36,30% of patients (table.2) complications in the form of GB, considered in terms of their dependence on the methods of treatment. Thus, the frequency of GB was significantly revealed in

patients (22,6%) receiving a combined regimen of clopidogrel and aspirin, almost equally (6,8%) GB was found in patients taking clopidogrel or aspirin monoterpia, as well as anticoagulant and antiplatelet therapy.

Table 2: Complications (GB) of anticoagulant therapy in patients with CHD (abs).

Combined therapy	Number of patients	Number of patients with complications (GB)
Monotherapy therapy 1st antiplatelet agents (clopidogrel or aspirin)	26 (17,80%)	10 (6,8%)
Combination therapy with 2 antiplatelet agents (clopidogrel+aspirin)	69 (47,26%)	33(22,6%)
Combination therapy 3rd (1 anticoagulant +2 antiplatelet)	51(34,94%)	10 (6,8%)
Total	146 (100%)	53 (36,30%)

According to the data obtained for the study of patients with fecal occult blood test (tab.3) 20,54% of patients showed a positive result, and 79,45% - negative.

Table 3: The results of the analysis of the fecal occult blood test (abs).

The fecal occult blood test	Quantity
Positive	30 (20,54%)
Negative	116 (79,45%)
Total	146 (100%)

During FGDS patients with coronary heart disease was defined by quantitative characteristics of the ulcer (table. 4). The results of the study showed that single ulcers occur in 47,26% of patients with coronary heart disease, and multiple- 48,3%, with a pronounced frequency in males (84,24%).

Table 4: Characteristics of ulcers of the stomach and duodenum in patients studied (abs)

	Number of ulcers	Male	Female	Total
1	Single	49(33,56%)	20(12,5%)	69 (47,26%)
2	Multiple	74(46,25%)	3(1,87%)	77 (48,13%)
	Total ulcers	123 (84,24%)	23(14,37%)	146 (100%)

When using the predictive Rockley scale in our study, almost everyone had a high risk of recurrent bleeding and a 7-8 chance of adverse outcomes. In endoscopic examination (table.5) using the Forrest bleeding classification [7], F1A was presented in 1 (1,5%) patient, but with obvious jet and ongoing bleeding from the ulcer; F2b-20 (31,74%) patients with established bleeding; F2C-40 (19,4%) F3 — 2 (3, 17%) patients with no signs of bleeding.

Table 5: Endoscopic determination of the degree of bleeding (abs).

Bleeding according to the Forrest	Number of patients
Forrest 1a	1 (1,5%) jet bleeding
Forrest 2b	20 (31,74%) fresh clot of ulcer bottom
Forrest 2s	40(63,49%) at the bottom of the ulcer hematin
Forrest 3	2 (3,17%) no signs of bleeding
Total	63 (100%)

When considering the localization of the ulcerative process in the examined patients with coronary heart disease (table.6) the highest frequency was detected in the antral

(46,38%) and pyloric (25,95%) part of the stomach and in the WPC (21,70%).

Table 6: Endoscopic location of the ulcerative process in the gastrointestinal tract (abs).

The localization of ulcers of the stomach and duodenum	Number of ulcers
Cardiac part	14 (5,95%)
Antral part	109 (46,38%)
The pyloric part	61 (25,95%)
DPK	51 (21,70%)
Total ulcers	235 (100%)

Analysis of the localization of ulcers with complicated

Table 7: Endoscopic location of ulcers depending on the gender of patients with CHD (abs).

	The localization of ulcers complicated with bleeding	Male	Female	Total
1	Cardiac part	3(3,16%)	4(4,21%)	7 (7,37%)
2	Antral part	35(36,84%)	12(12,63%)	47 (49,47%)
3	The pyloric part	16 (16,84%)	3 (3,16%)	19 (20%)
4	DPK	17(17,89%)	5(5,26%)	22 (23,15%)
	Total ulcer	71(74,74%)	24(25,26%)	95(100%) -236(40,25%)

Table 8: Complications of peptic ulcer disease of stomach and duodenum depending on the gender of patients with CHD (abs)

	Ulcer of the stomach and duodenum	uncomplicated		complicated		Total
		Male	Female	Male	Female	
	Localization					
1	Cardiac part	5(2,12%)	2(0,84%)	3 (1,27%)	4(1,69%)	14(5,93%)
2	Antral part	44(18,64%)	18(7,63%)	35(14,83%)	12(5,08%)	109(46,18%)
3	The pyloric part	32(13,56%)	10 (4,24%)	16(6,78%)	3 (1,27%)	61(25,84%)
4	DPK	24(10,17%)	6(2,54%)	17(7,20%)	5(2,12%)	52(22,05%)
	Total ulcer	105(44,5%)	36(15,25%)	71(30,08%)	24(10,17%)	236(100%)

The presented analysis of the revealed complications of peptic ulcer disease (table.8) establishes the presence of 236 (100%) different ulcers in examined patients with coronary heart disease. The largest number of bleeding ulcers detected in the antrum of the stomach (46, 18%), defined as uncomplicated in 18,64% and as complicated forms in 14,38% in men, and respectively 7,63% and 5,08% - in women. In the pyloric part, bleeding from ulcers detected in 25,84% of cases were characterized by uncomplicated in 13,56% and complicated (6.8%) forms in men, and respectively 4,24% and 1,27% - in women. The frequency of complications of peptic ulcer disease also remained high in DPK (22,05%), with a sufficiently high detection of uncomplicated (10,17%) and complicated (7,20%) forms in men, and, respectively, 2,54% and 2,12% - in women.

Summary

1. In patients with CHD in 65.06% of cases, gastrointestinal bleeding (GB) from the upper gastrointestinal tract is observed. GB in patients with coronary heart disease in most cases (47,3%) were associated with combination therapy with antiplatelet agents (clopidogrel + aspirin).
2. Ulcerative lesions of the stomach and DPC, including those complicated by bleeding, are more common in male patients with coronary heart disease.
3. Ulcerative lesions of the gastrointestinal tract in patients with coronary heart disease are localized mainly in the antrum of the stomach. The main source of GB in patients with coronary heart disease is ulcers of the antral and pyloric stomach and duodenum.

bleeding (table.7) revealed also the greatest GB in the department of antralnom (49,47%) and at men in 3 times more often, than at women (36,84% against 12,63%). Also, a significant amount of GB was detected from DPK ulcers (23,15%) again in a greater degree in men (17,89%) than in women (5,26%). The relative frequency of bleeding ulcers was also found in the pyloric section of the stomach with a high degree in men (16,84%) than in women (3,16%). Only a small number of ulcerative bleeding was detected from the cardiac part of the stomach (7,37%).

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