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Effect of comorbidity on outcome in acute coronary syndrome patients with ST segment elevation

In the article the comorbidity makes difficult to diagnose diseases, weights for the underlying condition, and requires additional treatment. From 835 patients with the acute coronary syndrome with the rise of ST segment comorbidity pathology was found in 98%.Thus on a background of current of the basic disease availability of aggravations on the first place-a chronic cholecystopancreatitis in 51 %, on the second place- erosions, ulcers top part gastrointestinal path in 44,1 %, on the third place-chronic colitis in 33,6%.

The results of the statistical analysis showed a significant increase of frequency of a lethal outcome in the group of patients with acute coronary syndrome with the rise of ST segment an exacerbation of chronic pyelonephritis for 5,7 % ($\chi 2=5,51$; art. st. 1; $p=0,019$) and with erosions , ulcers defeat of the top part gastrointestinal path for 4,7 % ($\chi 2=4,1$; art. st. = 1; $p=0,043$). In this connection, at delivery of the patient with acute coronary syndrome with the rise of ST segment in a hospital consultation of the physician for the selection of treatment comorbidity is required to a pathology.

Keywords: comorbidity, acute coronary syndromes with the rise of ST segment, gastrointestinal ulcers, chronic pyelonephritis, chronic colitis.

Relevance of the topic:

Under comorbidity understood the combination of two or more pathological syndromes or diseases of the patients, pathogenetically interrelated or overlapping in time [5,3]. Coronary heart disease in isolated form is quite rare. According Vertkin A.L., myocardial infarction (MI), clinically isolated is diagnosed in men in 17% of cases, and women - in 32% of cases [1,4]. All-in-all, in 78,6% of cases of MI comorbidity was identified, the most common of which are the carotid arteries (69%), diseases of the genitourinary system (78%), respiratory (73%), diseases of the gastrointestinal tract (70 %) [2]. In the clinical practice there is, often a combination of two or three of nosology, but in a few cases (2,7%) one patient can have the combination of 6-8 comorbidities simultaneously. The predictor of comorbidity, which can not be subjected to correction, is age. So in elderly and senile patients often reveal different comorbidy conditions are revealed[3]. Comorbidity

among people of age 80 and older found in more than 80% of cases [5]. In clinical practice, comorbidity is a significant problem in the treatment of acute coronary syndrome (ACS) connected with cumbersome diagnosis and worsening the underlying disease. In addition, comorbidy pathology requires additional treatment.

Purpose: To analyze the comorbidity status and its impact on outcome in patients with acute coronary syndrome with the rise of ST segment.

Materials and Methods: We analyzed 835 cases of ACS according to the call card emergency care , in-patient medical histories (IB), and autopsy reports in electronic and paper formats in Yakutsk, Blagoveshchensk, Komsomolsk-na -Amur, Yuzhno-Sakhalinsk and Petropavlovsk-Kamchatsky.

Deaths have been reported in 107 patients, including 64 men, an average age 60,3 ± 4,8 years, and 43 women with an average age of 67,1 ± 5,5 years. Clinico-morphological analysis was performed according to the rules of the clinical formulation and postmortem diagnoses according to ICD-10.

Electronic database is prepared in the program MS Excel 2007. Statistical analysis was performed using the software package IBM Statistics 19 version. To establish (the characteristics of the) learned population characteristics used bootstrap analysis with the calculation of percentile 95% confidence interval, based on 1000 random samples. Calculated interval estimates, expressed in percentage, were used to identify statistically significant differences in the frequency characteristics of the studied compared groups. To analyze the relationship of qualitative features used classic chi-square test of Pearson. Investigation of the effect on the frequency of comorbidity disease mortality was performed by calculating odds ratios with 95% confidence intervals.

The results and discussion leading to the admission of all patients in the Cardiac and cardiac branch was acute coronary syndrome with the rise of ST segment that at admission subjected to the differential diagnosis as unstable angina (UA) and myocardial infarction segment elevation ST (STEMI). In this case, the proportion of patients with UA was only 8%, and STEMI - 92%. In the analysis of the supporting vouchers health care, we found that in 43% indicates an additional diagnoses were indicated 23% did not agree with comorbidity in the final diagnosis. In 90% of comorbidity, as stated in the leaflet of health care , is not supported in the final diagnosis. It should be noted that the final diagnosis in 88% of patients established comorbidity. The discrepancies can be explained by the diagnosis that in the time of the ACS the contact between doctor and patient is usually of short duration and limits the possibility of a detailed examination of the patient medical history and the cause of which is the severity of the patient. Therefore, pre-hospital diagnosis and

interpretation of comorbidity are inappropriate. At the pre-hospital stage it is advisable to set the diagnosis of ACS and its severe complications, such as acute coronary syndrome with the rise of ST segment , acute heart failure. This language should not be considered in the event of any discrepancy exacerbations paint of chest, diagnosed in the hospital. When hospitalization cardiologist determines the tactics of the patient: meeting rentgenendovaskulyarnyh coronary interventions (routine or emergency) or conservative treatment. Based on this decision about a plan of the patient. The research we have found that counseling therapist held only 43% of patients at 3-5 days, and the remaining 57% of patients such consultation was undertaken. According to the results of the final diagnoses identified cases of acute concomitant diseases: chronic bronchitis - 23,2% (20,4-26,1%), pneumonia - 12.8% (10,7-15,1%), chronic cholecystopankreatitis - 51% (47,5-54,4%), erosions , ulcers defeat of the top part gastrointestinal path - 44.1% (40,6-47,5%), chronic colitis - 33,6% (30,4-36,9%), anemia - 21,6% (18,7-24,6%), chronic pyelonephritis - 34.0 (30,9-37,1%), artrozoartiriity - 29,2% (25,9-32,4%) . In the brackets the 95% confidence interval (CI) for the frequencies is pointed out.

Thus, among the number of comorbidity diseases lead chronic choletsistopankreatitis and erosive and ulcerative lesions of the gastrointestinal tract lead, which are observed in almost half of patients with acute coronary syndrome with the rise of ST segment. However, the pharmacological treatment of major groups, recommended for the treatment of this disease: proton pump blockers and H2-histamine blockers received only 12% of patients with this pathology. Chronic colitis with a tendency to constipation was diagnosed in one third of patients with drugs with laxative effects have been appointed only 2% of patients. About a quarter of patients were suffering from diseases of bacterial etiology. However, antibiotic therapy was given only to 19% of patients. A quarter of patients had anemia of varying severity, correction of iron supplements which held only 3% of cases. On the treatment of artrozoartriitis it is difficult to judge due to the fact that 80% of patients were treated with drugs from the group of non-steroidal anti-inflammatory drugs. The problem lies also in the fact that at present there are no clear criteria for determining the need for treatment of common comorbidity conditions (Figure 1.).

Fig.1. Exacerbations associated chronic diseases in patients acute coronary syndrome with the rise of ST segment (%)

The main cause of deaths in the study group had congestive heart failure, which was diagnosed in 72% of cases, while in 48% of cases it was accompanied by decompensated therapeutic pathology. According to the autopsy pathology comorbidity was found in 98% of 107 patients who died. The structure of comorbidity was a combination of two disease entities in 43%, three - at 30%, and four - in 20% of patients. Asthma therapeutic pathology in 37% of cases had been identified as the second competing disease. According to the results of our research in the structure of comorbidity the most common illnesses are gastrointestinal diseases (81%), respiratory (69%) and urinary system diseases (48%). According to the analysis of the frequency differences of clinical and post-mortem diagnosis was 7%. The main reasons were the under diagnosis and underreporting of clinical data in the additional 47%, the severity of the patient in 42%, short hospital stay in 11% of cases. One day mortality was ascertained in 40% of patients, 96% of which comorbidity severity was found.

Thus, in the area of the study a high frequency of comorbidity in patients is recorded, which increases the main disease and may effect the outcome.

Table 1.

The frequency of death in patients with acute coronary syndrome with the rise of ST segment with different comorbidity

pathology	lethality		The odds ratio		χ^2 Pirson	p		
	with pathology		no pathology		significance	95% confidence interval		
	abs.	%	abs.	%		inferior	superior		
pneumonia	14	13,1	93	12,8	1,028	0,563	1,872	0,008	0,929
chronic bronchitis	27	14,0	80	12,5	1,143	0,715	1,827	0,310	0,577
chronic cholecystopancreatitis	63	14,8	44	10,7	1,448	0,959	2,185	3,127	0,077
anemia	27	15,0	80	12,2	1,268	0,792	2,032	0,981	0,322
chronic colitis	40	14,3	67	12,1	1,209	0,794	1,842	0,782	0,377
chronic pyelonephritis	47	16,6	60	10,9	1,633	1,081	2,466	5,514	**0,019**
erosions and ulcers upper gastrointestinal tract	57	15,4	50	10,7	1,520	1,012	2,284	4,102	**0,043**
Arthrosoarthritis	35	14,4	72	12,2	1,215	0,787	1,887	0,775	0,379

Where OR - the odds ratio, 95% CI - confidence interval; p - significance level
The influence of the most common comorbidity on the outcome of the disease (Table 1).

The study found that the presence of comorbidity chronic pyelonephritis death rate increases by 5,7%. In patients with concomitant erosive and ulcerative lesions of the upper gastrointestinal tract a similar increase is also observed in the incidence of death by 4,7%. The differences of frequency are statistically significant. The odds ratio analysis to evaluate the impact of disease on the outcome of the study showed that patients with chronic pyelonephritis in an average of 63% increase the probability of death. In addition, the presence of concomitant erosive and ulcerative lesions of the upper gastrointestinal tract as the probability of death increases in average of 52%. It should be noted that these probabilities are statistically significant. For other pathologies studied significant differences in the effect on the incidence of death was not found.

Thus, it was found that, first, erosive and ulcerative lesions of the gastrointestinal tract associated

with taking anti-inflammatory drugs, including aspirin, promote the formation of erosions and patients with ulcers, significantly increase mortality. So the immediate cause of death in ACS 2,8% of the cases was gastrointestinal bleeding from acute erosive and ulcerative lesions of the mucous membranes of the upper gastrointestinal tract . Second, an increase in mortality in patients with concomitant pyelonephritis causes more severe and difficult correctable hypertension.

The study revealed high prevalence rates of comorbidity in acute coronary syndrome patients with the rise of ST segment: every second revealed worsening gastrointestinal disease, one in three - pathology of the respiratory and urinary system diseases, which are associated with an increased risk of death.

Conclusions:

1. About 90% of patients have cardiology therapeutic pathology comorbidity, with the most common gastrointestinal disease.

2. The lack of standards of cardiology patients with the presence of comorbidy disease positions is leading to its underestimation, inadequate drug therapy and the underlying disease burdens, and therefore, all patients admitted to the cardiac emergency in the first hour of the therapist must be inspected to determine the status and associated comorbidity with the risk of complications, and rational drug correction of comorbidity conditions.

3. In the case of hospital stay and revealing his acute comorbidity disease should be monitored daily by a therapist to correct treatment depending on the dynamics of the disease process.

4. To carry out these activities it is necessary to have regular units of the physician in a hospital of cardiology and cardiac surgery profiles.

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