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EFFICIENCY OF DRAINAGE OF ASCIT-PERITONITIS IN DIFFERENT DIFFICULTY OF ACUTE PANCREATITIS

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The global incidence of acute pancreatitis ranges from 5 to 30 cases per 100,000 people per year and continues to grow in recent years. A fifth of patients are diagnosed with a severe form of acute pancreatitis with a mortality rate of up to 30%. Publications and randomized clinical trials show conflicting data on the effectiveness of abdominal drainage in acute pancreatitis complicated by ascites-peritonitis. The aim of the study was to analyze the effectiveness of drainage interventions in acute pancreatitis complicated by ascites-peritonitis depending on the initial severity of the patient's condition. We analyzed the results of a comprehensive examination and treatment of 166 patients with acute pancreatitis complicated by enzymatic ascites peritonitis. In the subgroups with the severity of the condition at the time of hospitalization, defined on the APACHE II scale of 5 or more points, a statistically significantly lower number of unsatisfactory results ($p < 0.05$) was observed 72 hours after the start of treatment in drained patients compared with patients whose treatment included only complex conservative therapy. In the subgroups with the severity of the condition at the time of hospitalization, the APACHE II score of less than 5 points, active surgical tactics did not have a statistically significant effect on the incidence of unsatisfactory treatment results and there was no significant difference between the condition of the drained and non-drained patients. These results confirm the absence of the influence of routine abdominal drainage for all patients with acute necrotic pancreatitis. However, patients with an APACHE II score of 5 and above are the category of patients who will be most justified in early drainage of ascites-peritonitis.

Key words: ascites-peritonitis, acute pancreatitis, abdominal drainage, severity of condition.

The work is a fragment of the research project "Differentiated surgical tactics for parapancreatic infectious-septic complications of destructive pancreatitis", state registration No. 0116U005439.

The global incidence of acute pancreatitis ranges from 5 to 30 cases per 100,000 people per year and continues to grow in recent years [5]. A fifth of patients are diagnosed with a severe form of acute pancreatitis with a mortality rate of up to 30% [1, 3]. Pancreatic ascites occurs in the early period of acute pancreatitis. Components of pancreatic ascites protease, lipase, unsaturated fatty acids and cytokines are highly toxic and contribute to the early development of systemic inflammatory reactions, multiple organ failure, and worsening disease prognosis [4]. Publications and randomized clinical trials show conflicting data on the effectiveness of abdominal drainage in acute pancreatitis complicated by ascites-peritonitis [2]. Moreover, the elimination of toxic ascites results in reduction of severity and duration of organ and multiple organ failure and avoids probable death in the early period of illness in patients with severe and extremely severe acute pancreatitis. [2].

The purpose of the study was to analyze the effectiveness of drainage interventions in acute pancreatitis complicated by ascites-peritonitis depending on the initial severity of the patient's condition.

Materials and methods. We analyzed the results of a comprehensive examination and treatment of 166 patients with acute pancreatitis complicated by enzymatic ascites-peritonitis, including 44 patients treated at the surgical department of municipal enterprise "Poltava Regional Clinical Hospital named after M.V. Sklifosovsky of Poltava Regional Council", and 122 patients treated at in-patient surgical department No. 2 of Kyiv City Clinical Hospital of Emergency Medical Services for the period 2013-2017. Patients were divided into two groups: 1st group included patients to whom only complex conservative therapy was applied according to the protocols of treatment of acute pancreatitis, and 2nd group included patients, to whom surgical interventions for enzymatic ascites-peritonitis was applied in addition to conservative treatment. Patients of each group were divided by severity of the condition at the time of hospitalization as determined by the APACHE II scale. There were no significant differences in age and sex in the study groups.

To remove the enzymatic exudate from the abdominal cavity, patients of the second group were subject to the following surgical interventions: 98 patients were subject to laparocentesis and drainage of the abdominal cavity, 24 patients were subject to transcutaneous drainage of the abdominal cavity under ultrasound control, 13 patients were subject to laparocentesis laparotomy and abdominal drainage and 8 patients were subject to surgical operations using median laparotomy of intraoperative rehabilitation and drainage of the abdominal cavity.

Statistical analysis of the study materials was performed using the program STATISTICA 10.0 (StatSoft, Inc., USA) using descriptive statistics methods calculated in the study groups of qualitative indicators in the form of frequencies and their percentages.

Spearman's non-parametric correlation criterion (R correlation coefficient) was calculated to analyze the relationship of qualitative indicators. The correlation coefficient was considered probable when error probability $p < 0.05$.

The statistical significance of the differences was determined by the nonparametric method between the indexes of the independent groups using Fisher's exact test. Differences at $p < 0.05$ were considered statistically significant for all types of analysis.

Results of study and their discussion. Patients, depending on the severity of the condition at hospitalization evaluated using the scale of Acute Physiology And Chronic Health Evaluation II (APACHE II) and selected treatment policy were distributed as shown in table 1.

Table 1

Distribution of patients according to the APACHE II scale severity at the time of hospitalization and chosen treatment policy

APACHE II scale at the time of hospitalization (points)	Drainage operation was not performed		Drainage operation was performed	
	Abs. units	%	Abs. units.	%
0	1	4.35	41	28.67
1	1	4.35	12	8.39
2	2	8.7	8	5.6
3	3	13.04	5	3.5
4	2	8.7	7	4.9
5	2	8.7	12	8.39
6	4	17.39	14	9.79
7	3	13.05	9	6.29
8	2	8.7	10	6.99
9	1	4.35	20	13.99
10	2	8.7	5	3.5
Total	23	100	143	100

To ensure objective evaluation of the efficacy of drainage interventions in patients with acute pancreatitis complicated by ascites-peritonitis, a statistical analysis of differences was performed using the Fisher exact test between the initial severity of the condition, estimated using the APACHE II scale and surgical policy and t efficiency criterion. Pain, the recovery of independent enteral nutrition and the presence of organ failure according to the Marshal scale were evaluated after 72 hours from the beginning of treatment as criteria for the effectiveness of more active surgical policy. Correlation relationship between these indexers was determined by Spearman's rank correlation method as shown in Table 2.

Table 2

The correlation between the indexes is determined by the Spearman's rank correlation method

	Drainage interventions were not performed			Drainage interventions were performed		
	Enteral nutrition recovery after 72 hours.	The presence of organ dysfunction on the Marshal scale after 72 hours.	Intense pain syndrome after 72 hours.	Enteral nutrition recovery after 72 hours.	The presence of organ dysfunction on the Marshal scale after 72 hours.	Intense pain syndrome after 72 hours.
The severity of the condition by Apache II scale at the time of hospitalization	R=-0.61 p=0.02	R=0.47 p=0.02	R=-0.16 p=0.46	R=0.37 p=0.0001	R=0.047 p=0.57	R=-0.14 p=0.09

Probable relationship of negative mean strength between the severity of the condition at the time of hospitalization on the Apache II scale, the recovery of enteral feeding after 72 hours for patients who did not undergo drainage interventions for ascites-peritonitis and a likely positive low-strength relationship between the severity of the condition at the time of hospitalization on the APACHE II scale, the recovery of enteral feeding after 72 hours for patients who underwent drainage interventions for ascites-peritonitis shows positive effect of drainage interventions on the recovery of enteral nutrition after 72 hours from the moment of hospitalization.

Possible positive mean strength is the relationship between the severity of the condition at the time of hospitalization on the APACHE II scale, the presence of organ dysfunction after 72 hours determined under Marshal scale in patients who did not undergo ascites-peritonitis drainage interventions and the unlikely positive low-strength relationship between APACHE II hospitalization and organ dysfunction after 72 hours determined by Marshal scale in patients who underwent drainage interventions for ascites-peritonitis show a positive effect of drainage interventions on the regression of organ dysfunction after 72 hours from the moment of hospitalization.

A statistical analysis of the differences in pain, the presence of organ failure according to the Marshal scale and the restoration of enteral nutrition after 72 hours was also performed from the beginning of treatment of patients with acute pancreatitis, depending on the drainage operation and the severity of the condition of patients at the time of hospitalization by means of Fisher's exact test. The following results were obtained. In the subgroups with the severity of the condition at the time of hospitalization, determined by APACHE II scale was 5 or more points, a statistically significantly lower number of unsatisfactory results ($p < 0.05$) was observed after 72 hours after initiation of treatment in drained patients compared to patients who were subject to only comprehensive conservative treatment. In the subgroups with the severity of less than 5 points at the time of hospitalization defined on the APACHE II scale, active surgical policy had no statistically significant effect on the incidence of unsatisfactory treatment results and no significant difference between the condition of drained and untrained patients.

Thus, we can agree with the opinion of L. Zhu, J. Lu, J. Yang et al. [7] that early stage drainage can reduce local and systemic toxicity to an acceptable level, and this may subsequently delay the rate of disease progression, while active surgical policy did not have a statistically significant effect on the rate of poor results of treatment in patients with severity of less than 5 points according to APACHE II scale.

Conclusion

These results confirm the absence of the influence of routine drainage of the abdominal cavity for all patients with acute necrotic pancreatitis [6]. However, patients with an APACHE II of 5 and more points are the category of patients for whom early drainage of ascites-peritonitis was the most justified.

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Реферати

ЕФЕКТИВНІСТЬ ДРЕНАЖУВАННЯ АСЦИТУ-ПЕРИТОНІТУ ЗА РІЗНОЇ СКЛАДНОСТІ ГОСТРОГО ПАНКРЕАТИТУ

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Світова захворюваність на гострий панкреатит становить від 5 до 30 випадків на 100 000 людей на рік і продовжує зростати в останні роки. У п'ятій частині пацієнтів діагностують важку форму гострого панкреатиту зі смертністю до 30%. Публікації та рандомізовані клінічні дослідження показують суперечливі дані про ефективність черевного дренажу при гострому панкреатиті, ускладненому асцитом-перитонітом. Метою дослідження був аналіз ефективності дренажних втручань при гострому панкреатиті, ускладненому асцитом-перитонітом залежно від початкового ступеня тяжкості стану пацієнта. Ми проаналізували результати комплексного обстеження та лікування 166 пацієнтів з гострим панкреатитом, ускладненим ферментативним асцитом-перитонітом. У підгрупах із ступенем тяжкості стану на момент госпіталізації, визначеним за шкалою APACHE II у 5 і більше балів, за 72 години після початку лікування спостерігали статистично достовірно меншу кількість незадовільних результатів ($p < 0,05$) у дренажних пацієнтів порівняно з пацієнтами, лікування яких включало лише комплексну консервативну терапію. У підгрупах із ступенем тяжкості стану та

ЭФФЕКТИВНОСТЬ ДРЕНАЖИРОВАНИЯ АСЦИТ-ПЕРИТОНИТА ПРИ РАЗНОЙ СЛОЖНОСТИ ОСТРОГО ПАНКРЕАТИТА

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Мировая заболеваемость острым панкреатитом составляет от 5 до 30 случаев на 100 000 человек в год и продолжает расти в последние годы. У пятой части пациентов диагностируют тяжелую форму острого панкреатита со смертностью до 30%. Публикации и рандомизированные клинические исследования показывают противоречивые данные об эффективности брюшного дренажа при остром панкреатите, осложненном асцитом-перитонитом. Целью исследования был анализ эффективности дренажных вмешательств при остром панкреатите, осложненном асцитом-перитонитом в зависимости от начальной степени тяжести состояния пациента. Мы проанализировали результаты комплексного обследования и лечения 166 пациентов с острым панкреатитом, осложненным ферментативным асцитом-перитонитом. В подгруппах со степенью тяжести состояния на момент госпитализации, определенным по шкале APACHE II в 5 и более баллов, за 72 часа после начала лечения наблюдали статистически достоверно меньшее количество неудовлетворительных результатов ($p < 0,05$) у дренированных пациентов по сравнению с пациентами, лечение которых включало только комплексную консервативную терапию. В подгруппах со степенью тяжести состояния и с показателем APACHE II

показником АРАСНЕ II менше 5 балів на момент госпіталізації, активна хірургічна тактика не мала статистично значущого впливу на частоту незадовільних результатів лікування, і не було суттєвої різниці між станом дренованих та не дренованих пацієнтів. Ці результати підтверджують відсутність впливу рутинного абдомінального дренажу на всіх пацієнтів з гострим некротичним панкреатитом. Однак пацієнти з оцінкою АРАСНЕ II 5 і вище є категорією пацієнтів, у яких найбільш виправданий ранній дренаж асцит-перитоніту.

Ключові слова: асцит-перитоніт, гострий панкреатит, черевний дренаж, тяжкість стану.

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менше 5 балів на момент госпіталізації, активна хірургічна тактика не мала статистично значущого впливу на частоту неудовлетворительных результатов лечения, и не было существенной разницы между состоянием дренированных и не дренированных пациентов. Эти результаты подтверждают отсутствие влияния рутинного абдомінального дренажа на всех пациентов с острым некротическим панкреатитом. Однако, пациенты с оценкой АРАСНЕ II 5 и выше являются категорией пациентов, у которых наиболее оправдан ранний дренаж асцит-перитонита.

Ключевые слова: асцит-перитонит, острый панкреатит, брюшной дренаж, тяжесть состояния.

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DAILY BLOOD PRESSURE PATTERN DISORDERS IN PATIENTS WITH STAGE II ESSENTIAL HYPERTENSION AND FREQUENT PREMATURE BEATS

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156 patients (65 men and 91 women) with stage II hypertension (stage II EH) were examined. The main group consisted of 124 of them, which according to the daily monitoring of the electrocardiogram had frequent supraventricular (SVPB) (74 persons) or ventricular PB (VPB) (50 persons). The comparison group included 32 patients with stage II EH without arrhythmia. It was established that patients with stage II EH and PB had significantly higher values of systolic (SBP) and diastolic blood pressure (DBP) during the day according to the data of daily blood pressure monitoring (DBPM). In patients with stage II EH, regardless of the presence of arrhythmia, there was a decrease in patients with dipper type and an increase in the number of pathological types of diurnal profile by SBP level, without a significant difference between the groups. In patients with stage II EH with PBs, the daily profile of non-dipper according to the DBP level was more frequent ($p = 0.03$). The presence of frequent VPB was associated with a predominance of the non-dipper profile in terms of DBT (76.0%, $p = 0.0003$) compared with patients with SVPB. The data obtained indicate a certain associative link between the disturbance of the diurnal BP profile, mainly DBT and the presence of PBs, namely in patients with stage II EH.

Key words: hypertension, supraventricular PB, ventricular PB, daily blood pressure monitoring, daily blood pressure profile.

The work is a fragment of the research project "Metabolic risk factors, cardiovascular remodeling and functional status of kidneys in patients with cardiovascular pathology. Possibilities of pharmacological correction", state registration No. 0119U101849.

Patients with arterial hypertension (AH) may have a variety of cardiac arrhythmias that contribute to cardiovascular complications. At present, atrial fibrillation is the most studied rhythm disorder. Despite that, the factors and mechanisms of the occurrence of supraventricular (SVPB) and ventricular (VPB) premature beats in hypertension have not been investigated sufficiently [1, 4, 8, 11].

There is evidence of a higher level of systolic blood pressure during the day (DSBP) and night (NSBP) in patients with arrhythmias. Episodes of SVPB have been registered on the background of high systemic blood pressure (BP) irrespective of the presence of left ventricular hypertrophy (LVH), which denies the leading role of myocardium structural remodeling in the occurrence of premature beats (PB) [8, 10]. According to other researchers, more frequent or more threatening VPB were associated not only with increased SBP but also with increasing LV myocardial mass [5]. Also, the influence of BP circadian variability on ventricular and atrial arrhythmias has been demonstrated [6]. It is determined that the continuous prolonged increase in blood pressure at night (non-dipper pattern) is an independent predictor of frequent and severe ventricular arrhythmias. The electrical instability of the myocardium on the background of changes in the circadian BP pattern could be explained by the direct relationship between BP changes and QT interval duration as well as the magnitude of its dispersion. The severity of structural changes of the atria and ventricles also can lead to the electrical instability of the atria and ventricles and to the occurrence of SVPB and VPB in such patients [6].

The state of the autonomic nervous system plays an important role in the BP regulation and the occurrence of hypertension [10]. According to the Framingham study, individuals with high blood pressure