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SEVER ACUTE PANCREATITIS: ASSESSMENT OF CLINICAL CHARACTERISTICS, IMAGING DATA, ACCOMPANYING PATHOLOGY, COMPLICATIONS AND CONSEQUENCES

Tetiana V. Formanchuk, Mariya I. Pokidko, Maksym A. Hudz, Vitaliy A. Katsal, Andrii A. Zhmur

National Pirogov Memorial Medical University, Vinnytsya, Vinnytsia, Ukraine

Abstract

Introduction. The issue of early stratification of patients with acute pancreatitis (AP) by severity is crucial in order to start infusion therapy in time and reduce the mortality rate.
Aim. The analysis of clinical characteristics, imaging data, concomitant pathology, complications and consequences of severe acute pancreatitis was carried out in this study.
Materials and methods. In this work, a detailed analysis of the clinical data of 131 patients with severe AP was carried out, including epidemiological, clinical data, as well as the development of local complications based on the results of imaging methods, such as computer tomography, ultrasound, and radiological methods. All patients with AP were divided into two groups: the deceased group, consisting of 59 patients, and the discharged group, consisting of 72.
Results. In-hospital mortality in patients with severe AP was 45,0%. The trend towards older age in the deceased group persists. The vast majority of deceased patients (59,4%) were admitted to a hospital within 24 hours of the onset of symptoms. Men predominated in the total sample: their ratio to women was 1,6 to 1,0, p=0,006. However, an increase in the proportion of women was noted in the group of the deceased (47,5% versus 31,9%, p=0,07 according to the $\chi 2$ test for independent groups). The aseptic necrotic form of AP was dominant both in the group of deceased and in the group of discharged patients – 38 (64,4%) versus 38 (52,8%), respectively (p=0,18). The alcoholic genesis of AP was significantly more frequent in the group of the deceased compared to the group of those discharged (35,6% vs. 11,1%, p=0,0008). In terms of the frequency of concomitant pathology, the groups of deceased and discharged patients did not differ (93,2% and 90,3%, respectively). Diabetes and obesity slightly prevailed in the group of the deceased. Complications were significantly more common in the deceased group than in the discharged group (100% compared to 81,9%, p=0,0006). Also, all three imaging methods (ultrasound, XR and CT) showed a different frequency of detection of fluid collections in patients with severe AP depending on the anatomical locations.
Conclusions. In patients with a severe course of AP, the risk factors for a fatal outcome can be the age of patients, female sex, delayed hospitalization from the moment of the first symptoms of the disease, necrotic form of the disease, alcoholic genesis of AP, the presence of concomitant pathology (obesity, diabetes) and the development of complications (pancreatogenic diabetes, peritonitis).

Keywords: **acute pancreatitis, severe course, predictors**

INTRODUCTION

Acute pancreatitis remains one of the most important problems in gastroenterology and surgery because of its potentially serious consequences and complications. The global incidence of this pathology has no tendency to decrease and is growing by 3,07% every year [9]. Lethality in AP varies significantly from 3% in a mild course to 20% in patients with a necrotic form of the disease [17]. And mortality after discharge from the hospital during the first year is twice as high as in-hospital mortality (5,5% versus 3,5%) [4]. Gallstone disease is considered one of the dominant causes of AP in the world [1].

In 2012, the criteria for a diagnosis of AP according to the revised Atlanta classification 2012 were presented to the medical community. According to them, the

diagnosis of AP is formed on the basis of any two of three symptoms: characteristic abdominal pain, an increase in the level of serum lipase/amylase three times and above the upper normal limits, corresponding data during ultrasound or CT imaging [2].

Diagnosis of acute pancreatitis using modern diagnostic methods is not a problematic issue. Decisive today is the issue of early stratification of patients by severity in order to timely start infusion therapy and reduce the mortality rate. A number of prognostic scales (BISAP, Ranson, etc.) and early biomarkers of severe AP have been proposed (creatinine, hematocrit, neutrophil-lymphocyte ratio, thrombocyte-lymphocyte ratio, distribution width of erythrocytes, and others) [3, 18, 20].

Analysis of clinical characteristics, imaging data, accompanying pathology, complications and consequences of severe acute pancreatitis is crucial for understanding the mechanisms of disease development and approaches to its treatment. After all, the issue of targeted therapy for AP remains open. On the one hand, infusion therapy for AP should be aimed at maintaining optimal perfusion of the pancreatic microcirculation and correcting hypovolemia, on the other hand, excess fluid during aggressive infusion therapy is dangerous due to the accumulation of fluid in the third space [7]. In this context, a detailed analysis of clinical data is offered, including epidemiological indicators, some clinical data. In addition, the results of imaging research methods, such as computed tomography, ultrasound and radiological methods, which are key in the diagnosis and assessment of patients' conditions, will be considered. The consequences of the severe course of acute pancreatitis, including the development of complications, will be analyzed to further determine the optimal strategies for managing these conditions and improving the effectiveness of treatment.

AIM

To study the peculiarities of clinical characteristics and data of imaging methods in the identification of risk factors for a fatal outcome in patients with severe AP.

MATERIALS AND METHODS

The study is based on a retrospective analysis of data from the medical records of patients with severe acute pancreatitis who underwent inpatient treatment in two medical institutions in the city of Vinnytsia: city clinical hospital of emergency medical care and Vinnytsia regional clinical hospital named after Pirogov in the period from 2017 to 2022. All patients consented to the collection and processing of clinical material. The study was conducted in compliance with the principles of the Declaration of Helsinki.

The diagnosis of acute pancreatitis was formulated according to the revised criteria of the Atlanta 2012 classification, which was based on the presence of any two of three symptoms: a typical abdominal pain syndrome, a threefold or greater increase in the level of serum amylase/lipase, and the presence of relevant changes in imaging (US or CT). Patients were also stratified by severity based on the same classification [2] (Table 1):

Table 1

Severity criteria of AP according to Atlanta 2012 classification

Severity of AP	Criteria
Mild	There are no local complications There is no organ failure
Moderate	Local complications are determined by /or Organ failure – transient (< 48 hours)
Sever	Permanent organ failure (>48 hours)

A complex of standard laboratory (general and biochemical analysis of blood and urine) and instrumental research methods (gastroscopy and radiological imaging methods) were performed for patients during hospitalization. In order to monitor the course of the pathological process, these studies were also performed dynamically for patients. However, in this paper, we were interested in the analysis of the early laboratory parameters obtained on the first day of the patient's inpatient treatment.

For the diagnosis of AP, as well as for the diagnosis of its complications in the course of treatment, patients underwent an ultrasound examination of the organs of the abdominal cavity both at the stage of hospitalization and during the course of treatment. Also, if necessary, X-ray examination of the chest organs, as well as computer tomography of the abdominal cavity and retroperitoneal space were performed for patients with AP.

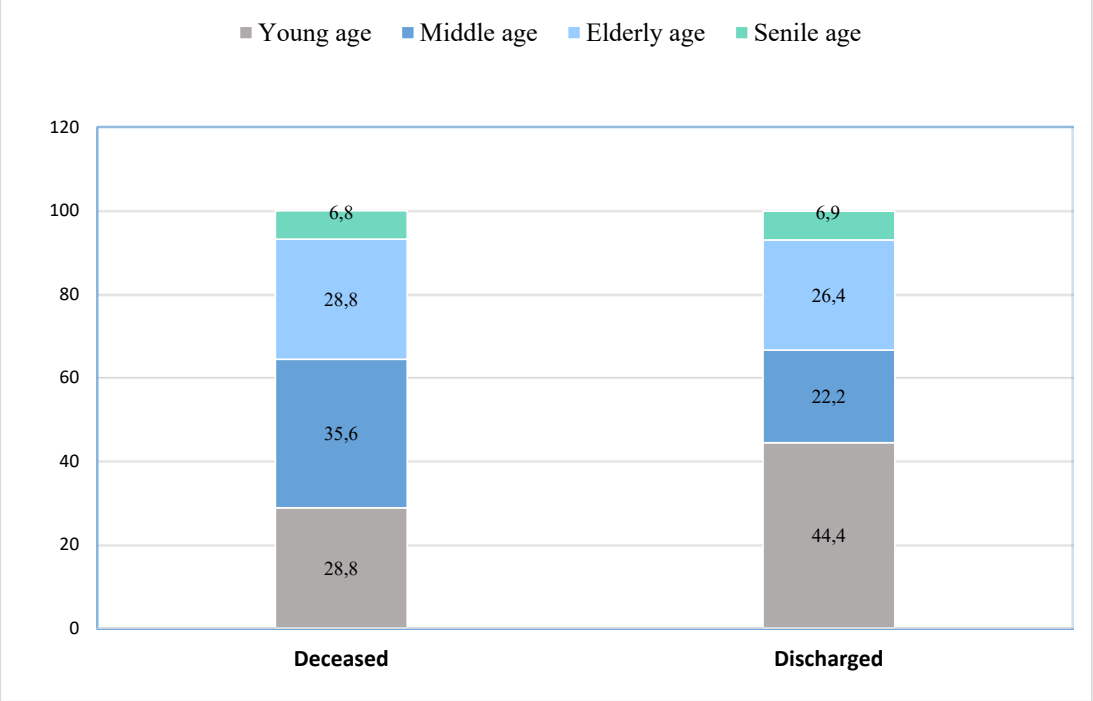
In total, the data of 131 patients with severe acute pancreatitis were included in the study. Among them, 38,9% (51) were women and 61,1% (80) were men. All patients, depending on the consequences of AP, were divided into two groups: the discharged group (72 patients) and the deceased group (59 patients). The following patient data were studied: age and gender distribution, time from the onset of the first symptoms of the disease to hospitalization, department of hospitalization, morphological forms of AP, severity of the

course, complications of AP, data of radiological imaging methods for the detection of fluid effusions, concomitant diseases, consequences.

The obtained material was subjected to statistical processing using SPSS software (version 20, IBM). Quantitative data are presented in the form of the median and interquartile range (25 and 75 percentiles) with a non-normal distribution of indicators (according to the Shapiro–Wilk test (W statistic)) and in the form of the average value of the indicator (M) ± standard deviation (σ) with a normal distribution – p by W-test > 0,05. The reliability of the difference in quantitative indicators was calculated for the median using the Kruskal-Wallis ANOVA & Median test, for the mean value – according to the one-factor ANOVA & LSD test. The significance level was set at 95%, the p value was considered statistically significant if it was <0,05.

RESULTS AND DISCUSSION

In-hospital mortality in patients with a severe course of AP was 45,0%. The analysis of the median age of patients with severe acute pancreatitis (n=131) did not reveal significant differences depending on the consequences of the course of the disease (discharged, n=72 and deceased, n=59; 51,0 and 47,0, p=0,22 according to the Mann-Whitney U test), while preserving the trend towards older age in the group of the deceased, which is worth paying attention to (Fig. 1). In our study, no reliability was found in the distribution of patients by age (p>0,05) (Fig. 1): young patients – 28,8% and 44,4%, middle-aged patients – 35,6% and 22,2%, the elderly – 28,8% and 26,4%, and the senile – 6,8% and 6,9%, respectively. However, in the group of deceased patients, there was a tendency for an increase in the proportion of middle-aged patients and a decrease in young patients.

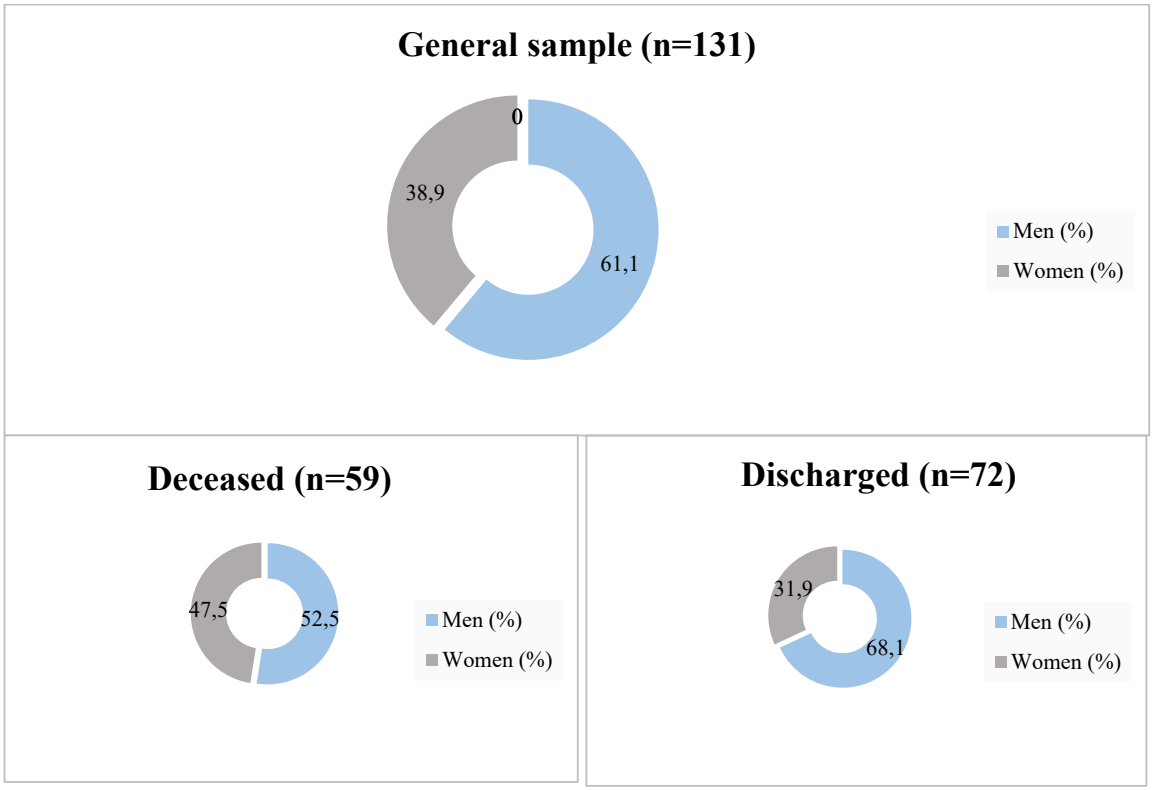


Groups of patients	The number of patients	Median age
Deceased	n=59	51,0 (42,0; 66,0)
Discharged	n=72	47,0 (41,0; 63,0)
		P=0,22

Figure 1. Age structure of patients (in %) depending on the consequences of acute pancreatitis.

Notes:
1. Intergroup difference %, calculated according to the χ2 criterion for independent samples, p>0,05;
2. The intergroup difference in age medians was calculated using the Mann-Whitney U test.

Analysis of the ratio of men to women in the groups showed that the total number of men was significantly greater than the number of women (ratio 1,6 to 1,0, p=0,006 according to the χ2 test for independent samples) (Fig. 2). The same trend was observed in the group of discharged patients, where the ratio of men to women was even higher, being 2,1 to 1,0, p=0,0001.



Ratio of men to women in different groups (reliability calculated according to the χ2 test for dependent groups)		
General sample (n=131)	1,6 to 1,0	χ^2=12,8; p=0,002
Deceased (n=59)	1,1 to 1,0	χ^2=0,3; p=0,86
Discharged (n=72)	2,1 to 1,0	χ^2=18,8; p=0,0001

Figure 2. Gender distribution of patients (in %) depending on the consequences of acute pancreatitis.

Note. Intergroup distribution by gender, carried out according to the χ2 test for independent samples, determined a trend towards reliability between the groups of patients who died and those who were discharged (p=0,07).

The analysis of patient routes (Table 1) was anticipated and revealed that deceased individuals were significantly less often treated in the surgical department (50,8% compared to 76,4%, p=0,002 according to the χ2 test for independent groups) significantly more often to be treated in the intensive care unit (44,1% compared to 23,6%, p=0,01) and other departments of the hospital (5,1% compared to 0, p=0,05).

Obviously, the time from the onset of the disease to the moment of hospitalization was not in favor of patients with AP. It has been proven that patients with delayed hospitalization more often develop fluid accumulations as local complications of AP [13]. As our analysis showed, the majority of patients who died (59,4%) were hospitalized within 24 hours of the onset of symptoms: 25,5% within 24-48 hours and 33,9% within 48 hours after the onset of the first symptoms. This did not reveal significant differences (p>0,60) in comparison with the group of discharged patients and mainly reflected the general nature of hospitalization of patients with acute severe pancreatitis.

In the group of patients who died, the edematous form of acute pancreatitis was diagnosed less frequently (5,1% vs. 12,5%, p=0,14) and aseptic necrotic form more often (64,4% vs. 52,8%, p=0,18) compared to the group of discharged patients, which looked quite logical and echoed the data of other authors [14] (Table 1).

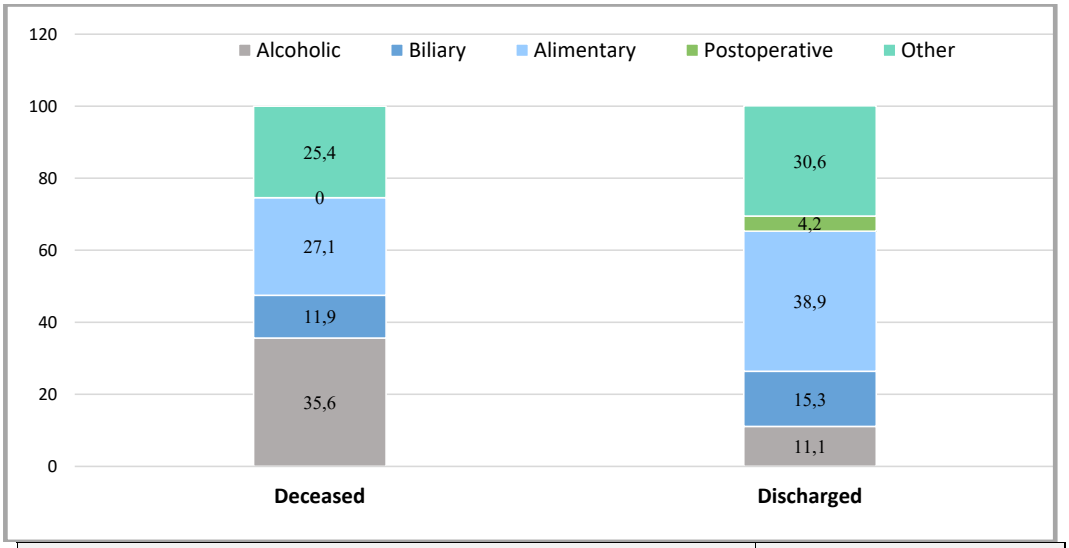
In the etiological structure of deceased patients, alcoholic pancreatitis was diagnosed significantly more often than in the group of those who survived (35,6% vs. 11,1%, p=0,0008). Other types of acute pancreatitis, on the contrary, were more often diagnosed in the group discharged from the hospital, namely patients with biliary (11,9% vs. 15,3%, p=0,57), alimentary (27,1% vs. 38,9%, p=0,16), postoperative (0 vs. 4,2%, p=0,11) and other (25,4% vs. 30,6%, p=0,52) etiological variants of AP.

Table 1

Clinical characteristics of patients with sever acute pancreatitis depending on the outcome

Clinical characteristics (n=131)	Deceased patients (n=59)	Discharged patients (n=72)	P
The patient's route – department of hospitalization			
Surgical, number (%) **85 (64,9%)**	30 (50,8%)	55 (76,4%)	0,002
ICU, number (%) **43 (32,8%)**	26 (44,1%)	17 (23,6%)	0,01
Other, number (%) **3 (2,3%)**	3 (5,1%)	0 (0)	0,05
Diagnosis			
Edematous form, number (%) **12 (9,2%)**	3 (5,1%)	9 (12,5%)	0,14
Aseptic necrotic pancreatitis, number (%) **76 (58,0%)**	38 (64,4%)	38 (52,8%)	0,18
Infected necrotizing pancreatitis, number (%) **43 (32,8%)**	18 (30,5%)	25 (34,7%)	0,61
Time from the moment of illness to hospitalization			
Up to 6 hours, number (%) **19 (14,5%)**	11 (18,6%)	8 (11,1%)	0,22
6-24 hours, number (%) **30 (22,9%)**	13 (22,0%)	17 (23,6%)	0,83
24-48 hours, number (%) **36 (27,0%)**	15 (25,4%)	21 (29,2%)	0,63
> 48 hours, number (%) **46 (35,1%)**	20 (33,9%)	26 (36,1%)	0,79

Note. The significance of the % difference was calculated according to the χ2 criterion for independent samples.



Genesis of acute pancreatitis	P
Alkoholic (n=29)	**0,0008**
Biliary (n=18)	0,57
Alimentary (n=44)	0,16
Postoperative (n=3)	0,11
Other etiology (n=37)	0,52

Figure 3. Etiological distribution of patients with acute pancreatitis depending on the consequences (distribution in %).
Note. The % reliability between groups was calculated according to the χ2 test for independent samples.

Diagnosed concomitant pathology in patients with acute pancreatitis of a severe course did not differ significantly between the groups of deceased and discharged patients, amounting to 93,2% in the deceased group and 90,3% in the discharged group (p=0,55) (Table 2). As for intergroup characteristics, in the group of deceased patients, diabetes (15,3% vs. 5,6%, p=0,06), and dietary, as well as constitutional obesity (22,0% vs. 12,5%, p=0,15) were more commonly observed, while pathology of the stomach and duodenum was less frequent (8,5% vs. 22,2%, p=0,03) compared to patients who were discharged.

Table 2

Accompanying pathology depending on the outcome of severe acute pancreatitis

Clinical characteristics (n=131)	Deceased patients (n=59)	Discharged patients (n=72)	P
Diagnosed accompanying pathology, number (%) **120 (91,6%)**	55 (93,2%)	65 (90,3%)	0,55
Pathology of the stomach and duodenum, number (%) **21 (16,0%)**	5 (8,5%)	16 (22,2%)	0,03
Cardiovascular pathology, number (%) **11 (8,4%)**	4 (6,8%)	7 (9,7%)	0,55
Diabetes mellitus, number (%) **13 (9,9%)**	9 (15,3%)	14 (5,6%)	0,06
Gallstone disease, number (%) **25 (19,1%)**	12 (20,3%)	13 (18,1%)	0,74
Obesity, number (%) **22 (16,8%)**	13 (22,0%)	9 (12,5%)	0,15
Other pathology, number (%) **50 (38,2%)**	23 (39,0%)	27 (37,5%)	0,86
Number of accompanying diseases, unit **1,0 (0; 1,0)**	1,0 (0; 1,0)	1,0 (0; 1,0)	0,35

Note. The significance of the difference % was calculated according to the $\chi 2$ test for independent samples, the median – according to the Mann-Whitney U test.

All patients (100%) who died were diagnosed with various complications (Table 3). The latter were present in 81,9% of patients who survived and were statistically significant compared to those who died (p=0,0006 by independent sample test $\chi 2$). In addition, the total number of multiple complications occurring simultaneously was significantly higher in the group of deceased patients than in the group of discharged patients (2,0 vs. 1,5, p=0,007). Among all complications, in the group of the deceased, type II diabetes was diagnosed significantly more often (13,6% vs. 4,2%, p=0,05), peritonitis (42,4% vs. 12,5%, p=0,0001), and other various complications (100% vs. 50,0%, p<0,0001). It is also worth paying attention to significantly less frequent diagnosis of fluid accumulations (10,2% vs. 25,0%, p=0,03) and pseudocysts (0 vs. 11,1%, p=0,008) in the group of the deceased compared to the group of discharged patients.

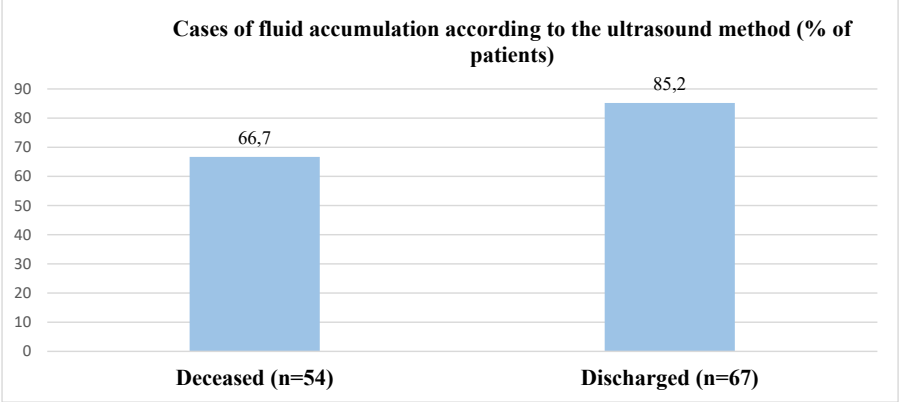
Table 3

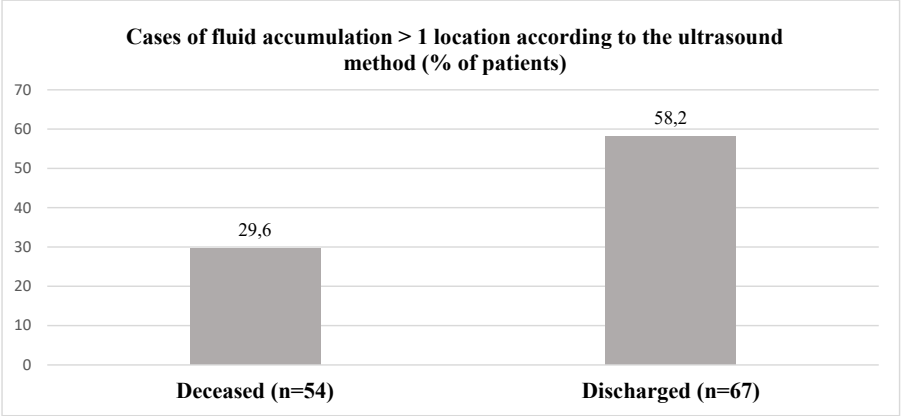
Diagnosed complications in patients with acute pancreatitis depending on its consequences

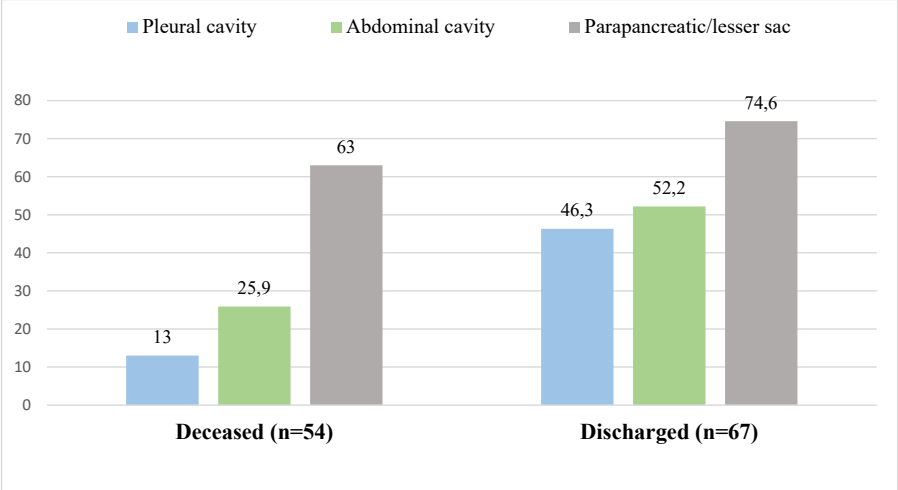
Clinical characteristics (n=131)	Deceased patients (n=59)	Discharged patients (n=72)	P
Diagnosed complications **118 (90,1%)**	59 (100%)	59 (81,9%)	0,0006
Fluid accumulations, number (%) **24 (18,3%)**	6 (10,2%)	18 (25,0%)	0,03
Phlegmon of the retroperitoneal space, number (%) **25 (19,1%)**	11 (18,6%)	14 (19,4%)	0,91
Parapancreatic abscess, number (%) **13 (9,9%)**	5 (8,5%)	8 (11,1%)	0,62
Type II diabetes, number (%) **11 (8,4%)**	8 (13,6%)	3 (4,2%)	0,05
Peritonitis, number (%) **34 (26,0%)**	25 (42,4%)	9 (12,5%)	0,0001
Pseudocyst, number (%) **8 (6,1%)**	0 (0)	8 (11,1%)	0,008
Pleurisy, number (%) **50 (38,2%)**	25 (42,4%)	25 (34,7%)	0,37
POPF, number (%) **1 (0,8%)**	0 (0)	1 (1,4%)	0,36
Other, number (%) **95 (72,5%)**	59 (100%)	36 (50,0%)	<0,0001
W-test: 0,66; p<0,0001 Total number of complications **2 (1; 3)**	2,0 (1,0; 3,0)	1,5 (1,0; 3,0)	0,007

Notes: 1. POPF – postoperative pancreatic fistula;
2. The reliability of the difference in the values of quantitative indicators is given according to the Mann-Whitney U test, % – according to the $\chi 2$ criterion for independent samples.

A similar pattern was demonstrated by the x-ray method during the examination of the pleural cavity – in patients discharged from the hospital with a severe course of AP, there was a predominance of cases of fluid accumulation in the pleural cavity compared to those who died. It should be noted that this predominance was not reliable, it was only a tendency towards an increase in cases with fluid accumulation in the pleural cavity (37,2% vs. 27,0%, p=0,29) (Fig. 5).



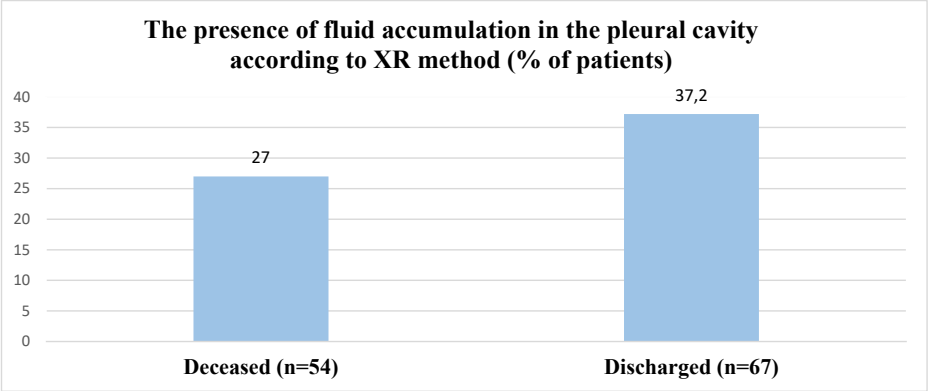




According to the ultrasound data	P
Accumulation of fluid in cavities	**0,02**
Fluid accumulation > 1 location	**0,002**
Pleural cavity	**0,0001**
Abdominal cavity	**0,003**
Parapancreatic/lesser sac	0,17

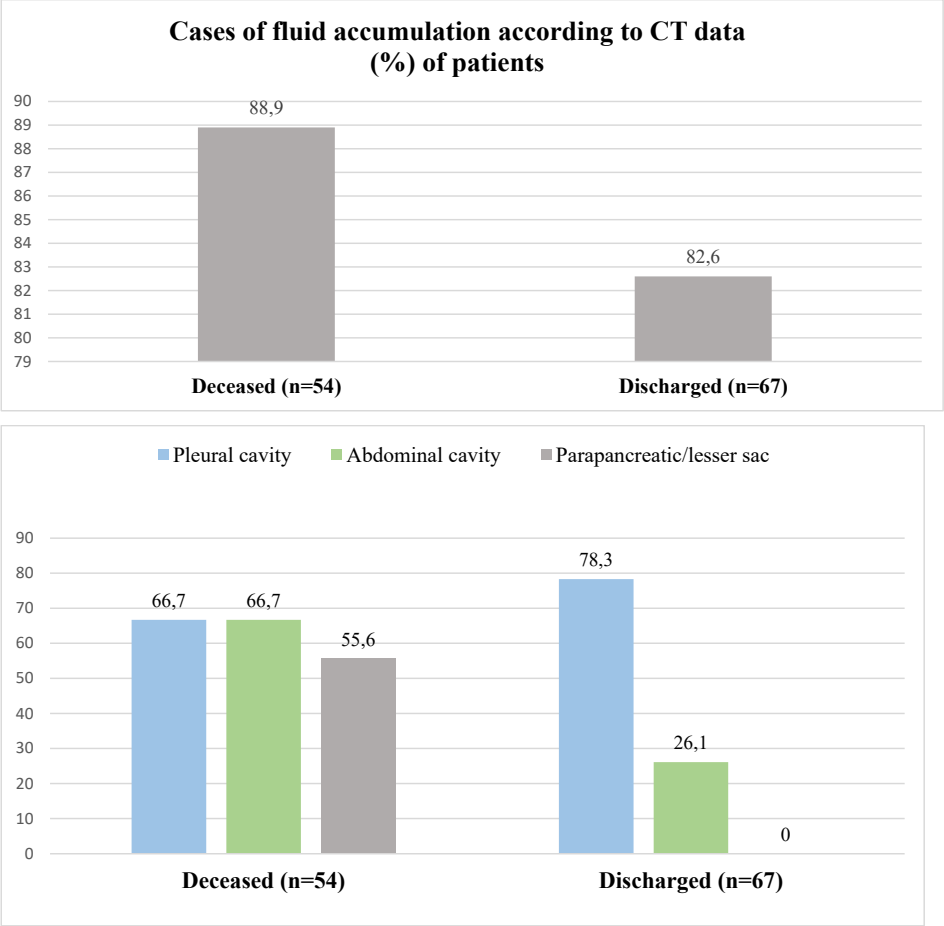
Figure 4. The presence of fluid accumulation according to the ultrasound method depending on the consequences of severe acute pancreatitis (the number of cases in %).
Note. The significance of the difference % was calculated according to the χ2 criterion for independent samples.

In contrast, the results of the computed tomography examination showed that among patients who died, there was a slight trend towards an increase in the total number of cases of fluid accumulation in various anatomical locations (88,9% compared to 82,6%, p=0,66), a tendency to decrease cases of fluid accumulation in the pleural cavity (66,7% compared to 78,3%, p=0,50), as well as a significant increase in cases of fluid accumulation in the abdominal cavity (66,7% compared to 26,1%, p=0,03) and in the parapancreatic/lesser sac (55,6% compared to 0%, p=0,0001) (Fig. 6).



According to XR data	P
Accumulation of fluid in the pleural cavity	0,29

Figure 5. The presence of fluid accumulation in the pleural cavity according to chest XR data depending on the consequences of severe acute pancreatitis (number of cases in %).
Note. The significance of the difference % is determined by the χ2 criterion for independent samples.



According to CT data	P
Accumulation of fluid in cavities	0,66
Pleural cavity	0,50
Abdominal cavity	**0,03**
Parapancreatic/lesser sac	**0,0001**

Figure 6. The presence of fluid accumulation in the cavities according to CT data depending on the consequences of severe acute pancreatitis (the number of cases in %).
Note. The significance of the difference % was calculated according to the χ2 criterion for independent samples.

DISCUSSION

Acute pancreatitis remains one of the most complex diseases of the abdominal organs, therefore the prognosis of its clinical course is strategically important for the early stratification of the disease by severity and at the beginning of the appropriate diagnostic and therapeutic complex. The existing criteria for assessing the severity of AP, based on clinical, biochemical and imaging data, do not always meet the given task. After all, acute pancreatitis is a dynamic process, as a result of which the patient's condition can worsen over time, so there is often a need to re-evaluate the severity of the condition. It often also provides divergences in diagnostic and therapeutic approaches, and their effectiveness in complex forms of AP [22]. That is why a detailed study of the pathophysiological mechanisms of the development of AP and their features in each etiological variant of the disease is necessary.

Further analysis of the clinical material revealed the preservation of the trend towards older age, an increase in the proportion of middle-aged patients and a decrease in the number of young patients in the group of deceased patients, which was observed in our sample. This echoes the data of a number of other authors, who also noted a high propensity for a severe course of AP and higher mortality in patients with age [10] and demonstrated a statistically significant correlation of the age of patients with high mortality and a 7,53 (95% CI: 1,88-30,20) times higher chance in patients of the elderly age range (≥65 years), which is statistically significant for Wald=8,11 and p<0,01 [17]. It has been proven that the increase in mortality in elderly patients with AP is the result of the negative impact of concomitant pathology, the frequency of which also increases with age, and not due to the development of complications [6, 12].

The predominance of male patients in the general sample echoes the data of other researchers [11, 15]. It should be noted that in the group of deceased patients, this ratio changed (1,1 to 1,0, p=0,86) due to an increase in the proportion of women (47,5% vs. 31,9%, p=0,07 according to the $\chi 2$ test for independent groups) and a decrease in the share of men (52,5% vs. 68,1%, p=0,07), respectively. Although a number of other studies have shown contrary data, in which female patients have significantly better clinical outcomes and lower mortality compared to males [15], our data indicate that female gender may be a prognostic factor for lethal outcomes in acute pancreatitis.

Of great practical interest is the analysis that evaluated the frequency of severe acute pancreatitis of various etiologies by consequences. In our study, the alcohol factor was significantly higher in the group of the deceased than in the group of discharged patients (35,6% vs. 11,1%, p=0,0008). Also, the data we obtained showed that acute alcoholic pancreatitis, especially in female patients, was associated with high patient mortality among patients with acute pancreatitis of a severe course, which completely coincided with the data of other studies [11]. The alcohol factor has been a subject of great interest for a long time. In recent decades, significant progress has been made in understanding the pathophysiological mechanisms of the development of alcoholic pancreatitis, including disruption of mitochondrial functions, autophagy, ectopic exocytosis, involvement of not only acinar cells, but also stellate and ductal cells in the pathological process [16]. However, despite the achieved successes, the exact mechanisms of development of alcoholic pancreatitis require further study.

Intergroup analysis of comorbidity rates did not reveal a significant difference in our study. Although according to the data of many studies, in particular the meta-analysis of 2019, the frequency of the probability of a severe course and mortality in elderly patients was 19 times higher compared to young patients and this is precisely related to the participation of concomitant pathology, which usually worsens the course of the disease [12]. Among concomitant diseases, diabetes and obesity were insignificantly higher in the group of the deceased compared to the group of discharged patients – 15,3% versus 5,6%, p=0,06 and 22,0% versus 12,5%, p=0,16, respectively. The potential role of diabetes in influencing the clinical course and consequences of severe AP echoes other studies [6], as well as the proven correlation of increased body mass index with severity and mortality in AP [5, 20]. It is logical that concomitant pathology was present in 100% of the deceased group. It was significantly higher compared to the discharged group.

Among the radiological methods of imaging for fluid accumulations in AP, the methods of ultrasound and chest X-ray demonstrated the prevalence of the overall frequency of detection of fluid collections in the group of discharged patients compared to the group of deceased patients – 25,0% vs. 10,2%, p=0,03, respectively. Instead, the computed tomography method showed the opposite result: a higher frequency of detection of fluid collections in the general sample of deceased patients compared to those who were discharged (88,9% vs. 82,6%, p=0,66, respectively). It is worth noting that the methods of ultrasound and chest XR are standard methods and are performed on almost all patients during hospitalization and when dynamics are needed. On the other hand, performing the CT method during hospitalization in a hospital is not standard practice, but is possible only in cases of difficulties in diagnosing or when diagnosing complications of severe forms of the disease. In the vast majority of cases, the CT method is performed no earlier than 72 hours after the onset of the disease.

The obtained data from the visualization of fluid collections using different methods (CT, ultrasound

and RG) showed a different percentage of detection of fluid effusions in the groups of deceased and discharged patients with sever AP. This suggests that in patients who died in the early period of AP, due to the shorter duration of the disease, there was not enough time for the development of fluid accumulations or their volume was insufficient for visualization by ultrasound or XR methods. According to the recommendations of Atlanta 2012, the CT method is performed a little later, not earlier than 72 hours after the onset of the disease, therefore, it is possible that it is more informative in the frequency of detection of fluid accumulations.

Also, all three methods showed a different frequency of detection of fluid effusions depending on anatomical locations. Thus, in the structure of fluid effusions detected by ultrasound, there were most parapancreatic fluid collections both in the group of the deceased and in the group of discharged patients (63 and 74,6%, respectively). The X-ray method revealed 27,0% and 37,2% of cases of pleural effusions in the group of deceased and discharged, respectively. In the structure of fluid collections detected by the CT method, fluid collections in the pleural and abdominal cavity dominated both in the group of the deceased and in the group of those discharged – 66,7% vs. 78,3%, p=0,66 and 66,7% vs. 26,1, p=0,03, respectively. This demonstrates the different sensitivity of each of the three imaging methods in the diagnosis of fluid collections of different anatomical localizations, which must be taken into account when drawing up a diagnostic program for patients with a complicated course of AP.

CONCLUSIONS

In patients with a severe course of AP, the risk factors for a fatal outcome can be the age of patients, female sex, delayed hospitalization from the moment of the first symptoms of the disease, necrotic form of the disease, alcoholic genesis of AP, the presence of concomitant pathology (obesity, diabetes) and the development of complications (pancreatogenic diabetes, peritonitis). Fluid effusions, as local complications of AP, are more informatively detected by computed tomography.

Prospects for further research. Further studies are needed to expand and provide a deeper understanding of the risk factors and pathogenesis of severe acute pancreatitis. For example, it is possible to investigate the influence of genetic factors on the development of severe forms of AP and their interaction with other risk factors, such as alcohol consumption, the presence of concomitant pathology and the simultaneous development of some complications. This will allow for the development of more accurate methods of predicting the risk of a fatal outcome and timely initiation of diagnostic and therapeutic regimens for patients with a severe course of AP.

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COMPLIANCE WITH ETHICAL REQUIREMENTS

The study was conducted in accordance with the principles of the Declaration of Helsinki of the World Medical Association, 'Ethical Principles for Medical Research Involving Human Subjects' (2000). All patients provided written informed consent for the collection and processing of clinical material.

AUTHOR CONTRIBUTIONS

Formanchuk T.[V. A, D, F]

Pokidko M.I. [E, F]

Hudz M.A. [B, F]

Katsal V.A. [B, F]

Zhmur A.A. [C, F]

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Резюме

ГОСТРИЙ ПАНКРЕАТИТ ВАЖКОГО ПЕРЕБІГУ: ОЦІНКА КЛІНІЧНИХ ХАРАКТЕРИСТИК, ДАНИХ ВІЗУАЛІЗАЦІЇ, СУПУТНЬОЇ ПАТОЛОГІЇ, УСКЛАДНЕНЬ ТА НАСЛІДКІВ

Тетяна В. Форманчук, Марія І. Покидько, Максим А. Гудзь, Віталій А. Кацал, Андрій А. Жмур

Вінницький національний медичний університет ім. М. І. Пирогова, м. Вінниця, Україна

Вступ. Питання ранньої стратифікації пацієнтів з ГП за важкістю є вирішальним з метою вчасного початку інфузійної терапії та зниження рівня смертності.

Мета. Аналіз клінічних характеристик, даних візуалізації, супутньої патології, ускладнень та наслідків гострого панкреатиту важкого перебігу був проведений в даному дослідженні.

Матеріали та методи. В даній роботі проведено детальний аналіз клінічних даних 131 пацієнта з ГП важкого перебігу, що включають у себе епідеміологічні показники, клінічні дані, а також розвиток локальних ускладнень за результатами методів візуалізації, таких як комп'ютерна томографія, ультразвукове дослідження та рентгенологічний метод. Всіх хворих з ГП розділили на дві групи: групу померлих склали 59 пацієнтів, групу виписаних – 72.

Результати. Летальність в стаціонарі у пацієнтів з важким ГП склала 45,0%. Збережена тенденція до старшого віку в групі померлих, на що варто звернути увагу. Переважна більшість померлих пацієнтів (59,4%) були госпіталізовані в стаціонар в термін пізніше 24 годин з моменту виявлення симптомів захворювання. В загальній вибірці переважали чоловіки: співвідношення їх до жінок склало 1,6 до 1,0, p=0,006. Проте у групі померлих відмічалось збільшення частки жінок (47,5% проти 31,9%, p=0,07 за критерієм $\chi 2$ для незалежних груп). Асептична некротична форма ГП була домінуючою як в групі померлих, так і в групі виписаних пацієнтів – 38 (64,4%) проти 38 (52,8%) відповідно (p=0,18). Алкогольний генез ГП був значно частішим в групі померлих порівняно з групою виписаних (35,6% проти 11,1%, p=0,0008). За частотою супутньої патології групи померлих та виписаних не відрізнялись (93,2% та 90,3% відповідно). Цукровий діабет та ожиріння незначно переважали в групі померлих. Ускладнення достовірно частіше були виявлені в групі померлих, ніж в групі виписаних (100% порівняно з 81,9%, p=0,0006). Також всі три методи візуалізації (УЗД, РГ та КТ) показали різну частоту виявлення РС у хворих з важким ГП залежно від анатомічних локалізацій.

Висновки. У пацієнтів з важким перебігом ГП факторами ризику летального наслідку можуть бути вік пацієнтів, жіноча стать, відтермінована госпіталізація з моменту появи перших симптомів захворювання, некротична форма захворювання, алкогольний генез ГП, наявність супутньої патології (ожиріння, цукровий діабет) та розвиток ускладнень (панкреатогенний цукровий діабет, перитоніт).

Ключові слова: **гострий панкреатит, важкий перебіг, предиктори**

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