

Analysis of patients diagnosed with acute pancreatitis: a retrospective single-centre study

 Ramazan İpek¹,  Mehmet Erdem²,  Ozan Aydemir²,  Orhan Sezgin³

¹Division of Hematology, Department of Internal Medicine, Faculty of Medicine, Van Yüzüncü Yıl University, Van, Türkiye

²Department of Internal Medicine, Faculty of Medicine, Van Yüzüncü Yıl University, Van, Türkiye

³Division of Gastroenterology, Department of Internal Medicine, Faculty of Medicine, Mersin University, Mersin, Türkiye

Cite this article as: İpek R, Erdem M, Aydemir O, Sezgin O. Analysis of patients diagnosed with acute pancreatitis: a retrospective single-centre study. *Intercont J Int Med.* 2025;3(3):58-63.

Received: 24.07.2025

Accepted: 25.08.2025

Published: 29.08.2025

ABSTRACT

Aims: Acute pancreatitis is an inflammatory disease of the pancreas and may be limited to the pancreas or may affect many organs and result in death. Different theories have been proposed in its pathogenesis. The aim of this study was to discuss the demographic characteristics, etiological causes and clinical features of patients with acute pancreatitis, whose frequency is not known in our country but which we see frequently in our daily practice.

Methods: The files of patients admitted to the gastroenterology clinic between May 2005 and May 2014 and diagnosed with acute pancreatitis were retrospectively reviewed. Age, gender, mode of presentation, cause of acute pancreatitis, clinical features and prognosis were analysed.

Results: A total of 630 patients were retrospectively analysed. Of the 630 patients diagnosed with acute pancreatitis, 289 (45.9%) were male and 341 (54.1%) were female. The mean age was 55.58 ± 17.4 years. The most common etiological cause was biliary causes in 420 (66.7%) patients. The most common reason for presentation was abdominal pain and nausea and vomiting in 415 (65.9%) patients. The most common presentation (28%) was in the spring season. 614 (97.4%) patients were discharged with recovery and 16 (2.6%) patients died. It was found that 3 methods (Ranson, APACHE, Atlanta) used in prognosis determination gave similar results.

Conclusion: Acute pancreatitis, which can be a mortal disease, has different etiological factors and the most common etiological factor is biliary origin. Abdominal ultrasonography is a valuable method in the detection of biliary pathologies. The most common presentation is abdominal pain accompanied by nausea and vomiting. It was observed that different scoring systems did not differ from each other.

Keywords: Acute pancreatitis, demographic characteristics, Ranson criteria

INTRODUCTION

Pancreas is an organ that provides synthesis, storage and secretion of large amounts of proteins consisting of digestive enzymes. Acute pancreatitis is a complex disease in which inactive digestive enzymes of the pancreas become active due to any etiological cause and may lead to pancreatic tissue damage, multiple organ failure and pancreatic necrosis.¹ This clinical condition may manifest itself in a wide range including mild abdominal pain, hypotension, fluid sequestration, metabolic disorders, sepsis and severe complications including death.² Approximately 25-30% of pancreatitis-related deaths occur in the first week of the disease and develop due to systemic causes related to progressive organ failure. Deaths observed in patients after the second week of hospitalisation are usually due to local complications including infected pancreatitis and necrosis.³

The most commonly used scoring system to determine the severity of acute pancreatitis today is the Ranson, Acute Physiology and Chronic Health Evaluation (APACHE) II and Atlanta criteria.⁴

The disease improves with conservative treatment to a great extent. Methods such as early intensive care follow-up, enteral feeding, ERCP, sphincterotomy, broad-spectrum antibiotherapy are used in the treatment of severe acute pancreatitis. The mortality rate of severe acute pancreatitis with mortality <1% is very high. This rate reaches 25% in patients with infected pancreatic necrosis or multiorgan failure. Diabetes mellitus may develop in 1/3-5 of recovered cases.⁵

METHODS

Study Design

The study was carried out with the permission of the Mersin University Ethics Committee (Date: 05.06.2014, Decision No: 2014/117). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. The study included 630 patients hospitalised with the diagnosis of acute pancreatitis in the Gastroenterology

Corresponding Author: Mehmet Erdem, dr.mehmet_erdem@hotmail.com



This work is licensed under a Creative Commons Attribution 4.0 International License.

Clinic of Mersin University Medical Faculty Hospital between May 2005 and May 2014. The study data were collected retrospectively from files and system records. Demographic characteristics, clinical conditions, laboratory tests and imaging results were recorded.

Inclusion Criteria

Patients aged 17 years and older, patients diagnosed with acute pancreatitis.

Exclusion Criteria

Patients under 17 years of age, patients who refused treatment, patients who developed pancreatitis after ERCP.

Statistical Analysis

SPSS 11.5 statistical package programme was used for statistical analysis of the data. For categorical variables, numbers and percentages were used as descriptive statistics. Chi-square analysis was performed to determine the relationship between two categorical variables. MedCalc 10.3.0 statistical package programme was used to determine the categorical variables with ratio difference between them. Median, minimum and maximum values were given as descriptive statistics for continuous variables that did not meet the assumption of normal distribution. Mann Whitney test, one of the nonparametric tests, was performed to examine the difference between two groups. Pearson correlation coefficient was used to determine the relationship between length of hospitalisation and wbc, crp ast. Logistic regression analysis was used to determine the independent markers that increase ranson 48 using the predetermined possible factors. Statistical significance level was taken as 0.05.

RESULTS

630 patients were included in the study. Gender, age below/above 55 years, body mass index, aetiology, initial presentation complaint and laboratory results at initial presentation are shown in [Table 1](#). Of the patients, 289 (45.9%) were male, 341 (54.1%) were female, and the mean age was 55.58 ± 17.4 years. Body mass index of 260 patients was calculated. Body-mass index was classified as underweight, normal, overweight, obese and morbidly obese. According to body-mass index, underweight 5 (1.9%), normal 73 (28.1%), overweight 116 (44.6%), obese 60 (23.1%) and morbidly obese 6 (2.3%) patients were observed. The most common aetiology was due to biliary causes (66.7%). When other causes were analysed, 8.6% were alcohol, 5.4% hyperlipidaemia and 19.4% other causes. Etiological classification was also made according to gender. The etiology of acute pancreatitis in women was 76.2% biliary causes, 1.1% alcohol, 4.7% hyperlipidaemia and 18.8% other causes, while in men it was 55.4% biliary causes, 17.3% alcohol, 6.2% hyperlipidaemia and 20.1% other causes. There was a significant relationship between etiology and gender ($p < 0.05$). This relationship was thought to be due to the difference in the rates of biliary and alcoholism between men and women ($p < 0.0001$). The most common reason for presentation was abdominal pain and nausea and vomiting (65.9%).

Ultrasonography was performed in 551 patients (87.5%) during hospitalisation. The most common ultrasonographic finding was gallbladder calculi (33%) and other findings are shown in [Table 2](#).

When the seasons during admission to the hospital were analysed, the least admission was in winter (22%) and the most admission was in spring (28%). This difference was statistically significant ($p = 0.03$). However, there was no difference according to other seasons ([Figure](#)).

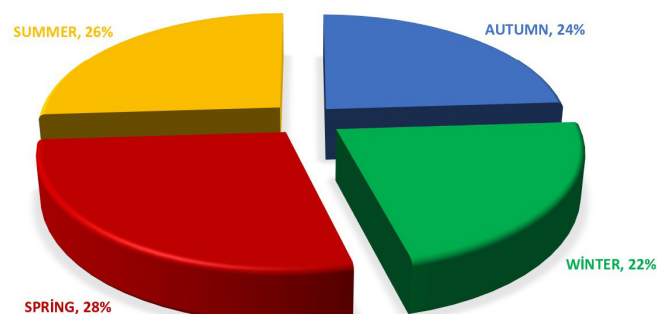


Figure. Frequency of acute pancreatitis according to seasons

The antibiotics taken by the patients during hospitalisation, complications and discharge status are shown in [Table 3](#). It was observed that 66.7% of the patients did not receive antibiotics, 16.5% received imipenem and 14% received ceftriaxone. It was observed that 94.1% of the patients did not develop any local complications and 73% did not develop systemic complications. Local complications were necrosis in 4.3%, pseudocyst in 1%, abscess in 0.7% and other complications in 0.5%. The number of patients discharged was 614 (97.4%) and the number of patients who died was 16 (2.6%).

The demographic characteristics of the patients and the relationship of clinical and imaging results with the severity of acute pancreatitis according to Ranson, Atlanta and APACHE scoring are shown in [Table 4](#).

Chest radiography was performed in all patients. Acute pancreatitis severity was divided into mild and severe according to Ranson, APACHE and Atlanta scoring. Patients with findings in favour of pneumonia and pleural fluid on chest radiography were identified. According to the Ranson scoring, pneumonia was seen in 1 (0.2%) and pleural fluid was seen in 12 (2.3%) patients who were considered mild; pneumonia was seen in 2 (1.8%) and pleural fluid was seen in 11 (9.6%) patients who were considered severe. According to APACHE scoring, pneumonia was seen in 2 (0.4%) and pleural fluid in 13 (2.6%) patients who were considered mild; pneumonia was seen in 1 (0.8%) and pleural fluid in 10 (7.9%) patients who were considered severe. According to the Atlanta scoring, no pneumonia was observed in any of the patients who were considered mild, while pleural fluid was seen in 8 (1.6%) patients; pneumonia was seen in 3 (2.2%) and pleural fluid in 15 (10.9%) patients who were considered severe. A significant difference was found between mild and severe groups in all three scoring systems in patients with chest radiographs ($p < 0.05$).

Computerised tomography was performed in 169 patients. 555 of the patients had a first episode of pancreatitis. No significant difference was observed in the severity of pancreatitis in the three scoring systems among patients who underwent computed tomography, those who had one or more episodes of pancreatitis and between genders ($p > 0.05$).

In patients under and over 55 years of age, the severity of acute pancreatitis was evaluated according to Ranson, APACHE and

Table 1. Demographic, clinical characteristics and laboratory results of patients with acute pancreatitis

				n (%)
Gender	Female		341 (54.1)	
	Male		289 (45.9)	
Age (years)	Under 55 years		321 (51)	
	Over 55 years		309 (49)	
Body-mass index	Underweight		5 (1.9)	
	Normal		73 (28.1)	
	Overweight		116 (44.6)	
	Obese		60 (23.1)	
	Morbid obese		6 (2.3)	
Etiology	Biliary causes	Female	260 (76.2)	
		Male	160 (55.4)	
	Alcohol	Female	4 (1.1)	
		Male	50 (17.3)	
	Hyperlipidemia	Female	16 (4.7)	
		Male	18 (6.2)	
	Other causes	Female	64 (18.8)	
		Male	58 (20.1)	
Clinical presentation	Abdominal pain		196 (31.1)	
	Nausea-vomiting		1 (0.2)	
	Fever		1 (0.2)	
	Abdominal pain+nausea-vomiting		415 (65.9)	
	Abdominal pain+fever		7 (1.1)	
	Abdominal pain+nausea-vomiting+fever		10 (1.6)	
Laboratory values at initial admission				
Parameter	Median		Minimum	Maximum
Leukocytosis (cells/mm ³)	11550		2100	66650
Fasting blood glucose (mg/dl)	120		11	570
AST (IU/L)	20		10	579
LDH (IU/L)	314		29	2822
LDL (mg/dl)	104		15	262
Triglyceride (mg/dl)	110		28	13750
Total cholesterol (mg/dl)	170		44	1355
Amylase (IU/L)	1167		24	9590
Lipase (IU/L)	2249		21	51460
ALP (IU/L)	113		25	1175
GGT (IU/L)	144		3.6	5825
Total bilirubin (mg/dl)	1.1		0.03	68
Direct bilirubin (mg/dl)	0.4		0	60
AST: Aspartate aminotransferase, LDH: Lactate dehydrogenase, LDL: Low-density lipoprotein, ALP: Alkaline phosphatase, GGT: Gamma-glutamyl transferase				

AST: Aspartate aminotransferase, LDH: Lactate dehydrogenase, LDL: Low-density lipoprotein, ALP: Alkaline phosphatase, GGT: Gamma-glutamyl transferase

Atlanta scoring. Statistically, there was a significant difference between patients under and over 55 years of age according to all three severity scores ($p < 0.0001$).

DISCUSSION

Female gender (54.1%) was more common in the patients admitted to our study. According to body mass index, overweight patients (44.6%) were more common. Although biliary causes (66.7%) were the most common in both males and females, there was a significant difference between etiology and gender. The main reason for this difference was that alcohol use was less in women and more in men.

The most common presenting complaint was abdominal pain with nausea and vomiting (65.9%), and all patients had abdominal pain (99%). Patients presented most frequently in spring and least frequently in winter. A significant difference was observed between these two seasons. Most of the patients did not develop any local or systemic complications and 16 patients died while 614 patients were discharged. There was a statistically significant difference between the patients who had chest radiographs and who were over and under 55 years of age according to Ranson, APACHE and Atlanta scoring.

The pancreas is an organ of the gastrointestinal tract with both endocrine and exocrine functions. In acute pancreatitis,

Table 2. Ultrasonographic findings of the patients

Findings	n	%
Normal	82	13
Enlarged pancreas	30	4.8
Peripancreatic fluid	5	0.8
Heterogeneous pancreas	33	5.2
Cyst-pseudocyst	3	0.5
Gallbladder stones-sludge	208	33
Stone in common bile duct-dilated duct	28	4.4
Dilated intrahepatic bile ducts	7	1.1
Other (pancreatic duct dilation/mass)	7	1.1
Enlarged pancreas/cyst-pseudocyst	22	3.5
Enlarged pancreas/stone in common bile duct-dilated duct	30	4.8
Cyst-pseudocyst/stone in common bile duct-dilated duct	19	3
Stone in common bile duct-dilated duct/dilated intrahepatic bile ducts	39	6.2
Stone in common bile duct-dilated duct/other (pancreatic duct dilation/mass)	13	2.2
Enlarged pancreas/cyst-pseudocyst/stone in common bile duct-dilated duct	14	2.2
Stone in common bile duct-dilated duct/dilated intrahepatic bile ducts/other	11	1.7
Total	551	87.5

digestive enzymes in the pancreatic tissue damage the pancreas for any reason. While mild pancreatitis causes only local effects, severe pancreatitis may cause systemic effects and lead to multiple organ failure.⁶

In a recent study including 104 patients, 59.6% were male and 40.4% were female. The mean age was 71.5 years. Etiologically, 58.7% were idiopathic, 37.5% biliary causes and 3.8% malignancies. While 98 of the patients were discharged, 6 of them died.⁷

Table 3. Antibiotic use and clinical course during hospitalization of patients with acute pancreatitis

		n	%
Antibiotic	None	420	66.7
	Ceftriaxone	88	14
	Imipenem	104	16.5
	Other (ciprofloxacin, sulperazone)	14	2.1
	Ceftriaxone+imipenem	3	0.5
	Ceftriaxone+imipenem+other	1	0.2
Local complications	None	594	94.1
	Abscess	2	0.3
	Pseudocyst	4	0.6
	Necrosis	25	4.1
	Other	3	0.5
	Pseudocyst+abscess	1	0.2
Systemic complications	Abscess+pseudocyst+necrosis	1	0.2
	None	460	73
	Circulatory	8	1.3
	Respiratory	8	1.3
	Renal	2	0.3
	Other	132	21.1
Discharge	Involvement of multiple systems	19	3
	Non-operated	600	95.2
Death	Operated	14	2.2
	Non-operated	13	2.1
	Operated	3	0.5

In the study by Gümüş et al.⁸ 163 (40.6%) of the patients were male and 238 (58.4%) were female and the mean age was 58.6 years. According to the APACHE scoring system, the mean age was 67.5 years in severe pancreatitis and 52.8 years in mild pancreatitis. Of the patients with acute pancreatitis, 304 (75.8%) were due to gallstones. While 385 (96%) of the

Table 4. Relationship of patients' demographic characteristics, clinical and imaging results with the severity of acute pancreatitis based on Ranson, APACHE, and Atlanta scoring systems

		Ranson		APACHE		Atlanta	
		Mild (%)	Severe (%)	Mild (%)	Severe (%)	Mild (%)	Severe (%)
Chest X-Ray (n: 630)		515 (81.9)	115 (18.1)	504 (80)	126 (20)	491 (78.1)	139 (21.9)
Pneumonia		1 (0.2)	2 (1.8)	2 (0.4)	1 (0.8)	0	3 (2.2)
Pleural effusion		12 (2.3)	11 (9.6)	13 (2.6)	10 (7.9)	8 (1.6)	15 (10.9)
p		0.001		0.028		<0.0001	
Computed tomography (n: 169)		112 (66.3)	57 (33.7)	112 (66.3)	57 (33.7)	99 (58.5)	70 (41.5)
p		>0.05					
Number of pancreatitis attacks	First attack (n: 555)	450 (81.1)	105 (18.9)	438 (78.9)	117 (21.1)	427 (76.9)	127 (23.1)
	Attack >1 (n: 75)	66 (88)	9 (12)	66 (88)	9 (12)	64 (85.3)	11 (14.7)
p		>0.05					
Gender	Female (n: 341)	270 (52.4)	70 (61.4)	275 (54.6)	66 (52.4)	265 (54)	75 (54.3)
	Male (n: 289)	245 (47.6)	44 (38.6)	229 (45.4)	60 (47.6)	226 (46)	63 (45.7)
p		>0.05					
Gender	<55 (n: 321)	300 (58.3)	21 (18.4)	289 (57.3)	32 (25.4)	287 (58.5)	33 (23.9)
	>55 (n: 309)	215 (41.7)	93 (81.6)	215 (42.7)	94 (74.6)	204 (41.5)	105 (76.1)
p		<0.0001					
APACHE: Acute Physiology and Chronic Health Evaluation							

patients presented at the first attack, 16 (4%) presented with recurrent attacks. While no gender difference was observed in acute pancreatitis cases not due to gallstones, a statistically significant difference was found in female gender (M/F: 1/1.7) in acute pancreatitis due to gallstones ($p < 0.05$). According to Atlanta scoring, 244 (61.8%) patients were evaluated as mild and 157 (39.2%) as severe acute pancreatitis. Twenty-seven of the patients underwent emergency surgery and the other patients received medical treatment. Mortality was observed in 7 (25.9%) patients who underwent surgery and mortality was observed in 18 (4.5%) of all patients.

In another study, 86 patients were included. The mean age of the patients was 52.33 years, 48 (55.8%) were female and 38 (44.2%) were male. All patients complained of abdominal pain at presentation, nausea and vomiting were found in 48 (55.81%) patients and dyspnoea in 2 (2.32%) patients. In the evaluation of the severity of acute pancreatitis according to Atlanta scoring, mild acute pancreatitis was found in 58 (67.4%) patients and severe acute pancreatitis was found in 28 (32.6%) patients. The mean duration of hospitalisation was 6.96 days. As a result of the treatment of the patients, 85 patients were discharged, 1 patient died and mortality was found to be 1.16%.⁹

In a study investigating the relationship between the severity of acute pancreatitis and platelet lymphocyte ratio, 418 patients were included and 370 (65.4%) of these patients were female and 197 (34.6%) were male. The mean age of the patients was 45.44 ± 36.94 years. The mean duration of hospitalisation was 6.61 ± 3.15 days. Etiologically, 301 (72%) patients had biliary origin and 117 (28%) patients had non-biliary origin. According to Ranson scoring, pancreatitis was mild in 394 (94.25%) patients and severe in 24 (5.75%) patients.¹⁰

The results of our study were similar to those found in the literature. However, it is remarkable that gallstones are approximately 8 times more common in the etiology of acute pancreatitis than alcohol consumption. This difference may be explained by the difference in alcohol consumption habits in our society compared to western societies.

Abdominal ultrasonography is useful in the detection of pancreatic enlargement and inflammatory changes and etiological pathology of the gallbladder and biliary tract. The disadvantage of the method is that it is user dependent and the evaluation is not adequate in the presence of intra-abdominal gas. The visualisation rate of the pancreas varies between 62% and 90%.¹¹ In our study, 551 (87.5%) of 630 patients were evaluated by ultrasonography and 469 (85.1%) of these patients had pathological findings in the pancreas, gallbladder or biliary tract. This gave us speed and time in making the diagnosis and then organising the treatment.

In our study, it was revealed that patients with acute pancreatitis were seen more frequently especially in the spring months and there was a statistically significant difference compared to the number of patients presenting in the winter months. Considering its relation with nutrition, foods rich in fat content significantly increase cholecystitis attacks in the presence of gallstones.¹² In pancreatitis of biliary origin, it may be expected to increase in relation with fatty diet. Therefore, patients with acute pancreatitis were expected to be more frequent in winter seasons when fatty food consumption is high. This may be explained by the lack of records and recording errors in our retrospective study.

In a meta-analysis published by Villatora et al.¹³ 7 studies and 414 patients were evaluated and it was observed that other antibiotics such as ciprofloxacin and cephalosporin except imipenem had no benefit in preventing pancreatic necrosis or mortal complications and imipenem significantly prevented pancreatic necrosis. In our study, 210 (33.3%) patients received antibiotic treatment, 104 (49.5%) of which were imipenem group antibiotics.

In the literature, 80-85% of acute pancreatitis is mild pancreatitis and 15-20% is severe pancreatitis.¹⁴ In our study, it was found that the APACHE, Ranson and Atlanta score systems of the patients were similar and 80% of the patients had mild pancreatitis and 20% had severe pancreatitis.

The patients were divided into two groups as below 55 years of age and above 55 years of age and it was found that the severity of pancreatitis increased with increasing age. It was also observed that patients who presented with acute pancreatitis attacks had mild severity of the first attacks. There was no difference in severity between patients who had more than one acute pancreatitis attack and patients who had their first attack.

Limitations

One of the most important limitations was that our study was single center. Another limitation was that our study was retrospective. We believe that prospective and multicenter studies on acute pancreatitis will contribute more to the literature.

CONCLUSION

Patients diagnosed with acute pancreatitis should be evaluated with a multidisciplinary approach. Scoring systems should be used during initial hospitalization. Although different scoring systems were used, the 3 systems we analysed were found to be similar. Depending on the severity of the disease, most patients with acute pancreatitis are discharged with cure, while the prognosis of the patient groups, especially those accompanied by complications, may result in death.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of the Mersin University Ethics Committee (Date: 05.06.2014, Decision No: 2014/117).

Informed Consent

Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

REFERENCES

1. Mikó A, Vigh É, Mátrai P, et al. Computed Tomography Severity Index vs. other indices in the prediction of severity and mortality in acute pancreatitis: a predictive accuracy meta-analysis. *Front Physiol.* 2019;10:1002. doi:10.3389/fphys.2019.01002
2. Garg SK, Sarvepalli S, Campbell JP, et al. Incidence, admission rates, and predictors, and economic burden of adult emergency visits for acute pancreatitis: data from the National Emergency Department sample, 2006 to 2012. *J Clin Gastroenterol.* 2019;53(3):220-225. doi:10.1097/MCG.0000000000001030
3. Mennezier D, Pons F, Arvers P, et al. Incidence and severity of non alcoholic and non biliary pancreatitis in a gastroenterology department. *Gastroenterol Clin Biol.* 2007;31(8-9 Pt 1):664-667. doi:10.1016/s0399-8320(07)91914-4
4. Banks PA, Bollen TL, Dervenis C, et al. Classification of acute pancreatitis-2012: revision of the Atlanta classification and definitions by international consensus. *Gut.* 2012;62(1):102-111. doi:10.1136/gutjnl-2012-302779
5. Altıntoprak F. Complications of the acute pancreatitis. *J Gen Surg-Special Topics.* 2011;4(1):48-55.
6. Bilgili MA, Dertli R, Kafee AA, Kilic G, Kayar Y. Is there a correlation between the initial calcium level and Balthazar classification in patients with acute pancreatitis? Is there a correlation between the initial calcium level and Balthazar classification in patients with acute pancreatitis? *Ulus Trauma Emergency Surg.* 2022;28(6):769-775. doi:10.14744/tjtes.2021.03464
7. Duru H. Utility of Ranson score, Computed Tomography Severity Index, and CRP criteria in risk stratification on the day of hospital admission in patients with acute pancreatitis: a cross-sectional analysis. Use of Ranson score, Computed Tomography Severity Index, and CRP criteria in risk stratification on the day of hospital admission in patients with acute pancreatitis: a cross-sectional study. *Ulus Trauma Emergency Surg.* 2023;29(3):350-357. doi:10.14744/tjtes.2022.33332
8. Girgin S, Kolakan MS, Keleş C. Our Experience in acute pancreatitis: analysis of 401 cases. *Turk HPB.* 2009;5(2-3):60-64.
9. Kayaoglu SA, Uzun M. Comparison of Bedside Acute Pancreatitis Severity Index score with apache II score in predicting the severity of acute pancreatitis. *KSU Med J.* 2016;2:143-148. doi:10.17517/ksutfd.813958
10. Kaya Y, Düğeroğlu H, Çınar H. The relationship between the severity of acute pancreatitis and platelet lymphocyte ratio. *FÜ Sag Bil Med Derg.* 2017;31:137-41.
11. Koizumi M, Takada T, Kawarada Y, et al. JPN Guidelines for the management of acute pancreatitis: diagnostic criteria for acute pancreatitis. *J Hepatobiliary Pancreat Surg.* 2006;13(1):25-32. doi:10.1007/s00534-005-1048-2
12. Gaby AR. Nutritional approaches to prevention and treatment of gallstones. *Altern Med Rev.* 2009;14(3):258-267.
13. Villatoro E, Mulla M, Larvin M. Antibiotic therapy for prophylaxis against infection of pancreatic necrosis in acute pancreatitis. *Cochrane Database Syst Rev.* 2010;2010(5):CD002941. doi:10.1002/14651858.CD002941.pub3
14. Carroll JK, Herrick B, Gipson T, LEE SP. Acute pancreatitis: diagnosis, prognosis and treatment. *Am Fam Physician.* 2007;75(10):1513-1520.