

THE INCIDENCE OF ACUTE PANCREATITIS WITHIN THE CLINICAL COUNTY EMERGENCY HOSPITAL OF SIBIU

ALINA-SIMONA BEREANU¹, MARIA ROTARU², MIHAI SAVA³

¹Clinical County Emergency Hospital of Sibiu, ^{2,3}“Lucian Blaga” University of Sibiu

Keywords: acute pancreatitis, severe acute pancreatitis

Abstract: Acute pancreatitis is the acute inflammatory process of the pancreas, which may initiate the Systemic Inflammatory Response Syndrome (SIRS). In severe forms, systemic activation of the inflammation and multiple organ dysfunction syndrome (MODS) occur. We noticed an increase in the number of severe pancreatitis cases in last years within Surgery I and Surgery II Clinics and within the Intensive Care Unit (ICU) of the Clinical County Emergency Hospital of Sibiu.

INTRODUCTION

Acute pancreatitis is an acute inflammatory process of the pancreas, which may remain localized at gland level or, it can expand variably to the peripancreatic retroperitoneal tissues and to the organs placed at a distance from the pancreatic region. This definition was adopted at the Consensus Conference in Atlanta in 1992.(1)

Acute pancreatitis (AP) may initiate SIRS. In severe forms, systemic activation of the inflammation and multiple organ dysfunction syndrome (MODS) occur.

The infection usually occurs on the 2nd week of disease evolution, and it is governed by the enteric bacteria.(2,3,4,5,6)

There have been proposed several prognostic scoring systems based on clinical criteria, laboratory and radiological data, the most popular being: Ranson score, Imrie (Glasgow) score, APACHE II score, APACHE III (Acute Physiologic and Chronic Health Evaluation), simplified APACHE and Balthazar score - CT index.

The circulating level of the C-reactive protein (CRP) is an independent prediction factor for the evolution of AP. CRP values greater than 120 mg/L are associated with necrosis.(3) There is no correlation between serum level of CRP and the presence of infected necrosis.(7)

Procalcitonin (PCT) has been shown to be a marker for severe bacterial and fungal infections.(4)

In acute pancreatitis, it may detect the severe forms and makes the differentiation between sterile and infected necrosis.(2,4,8)

Computed tomography (CT) with contrast substance is considered the golden standard for the diagnosis of pancreatic necrosis and pancreatic collections and for the classification of acute pancreatitis - Balthazar score. CT severity index (CTSI) is obtained by adding the score of inflammation and the necrosis score.

PURPOSE

The purpose of this study is to establish the incidence of acute pancreatitis and of severe forms hospitalised within the Clinical County Emergency Hospital of Sibiu.

The study is based on the direct observation of the patients and on the complex analysis of the clinical, paraclinical and laboratory observation materials.

MATERIALS AND METHODS

The study was approved by the Ethics Commission of the Clinical County Emergency Hospital of Sibiu. From January 2011 to April 2014, a group of 165 patients admitted in the ICU and in the Surgical Departments of the Clinical County Emergency Hospital of Sibiu with the diagnosis of acute pancreatitis, was included in this prospective observational study. The inclusion of the pancreatitis cases according to the severity degree was made using with the Atlanta criteria. To accurately define the severe acute pancreatitis, intraoperative and post-mortem CT criteria were taken into consideration in order to confirm the local and systemic complications, according to the diagnosis standard criteria.

The laboratory and clinical data were recorded prospectively, 24 hours for APACHE II score and 48 hours for Ranson score.

The information was gathered through the direct observation of the patients and through the analysis of the observation sheets data.

RESULTS

The general group includes 165 patients.

Table no. 1. Distribution of the incidence of acute pancreatitis per years

	2011	2012	2013
No. of cases of mild acute pancreatitis	29	29	27
No. of cases of acute severe pancreatitis	14	16	28
Total no. of cases of acute pancreatitis	43	45	55

To the number of patients mentioned in the previous table, we added another 22 patients who were admitted between January to April 2014.

In the table above, there can be noticed an increase of the incidence of acute pancreatitis during the period of the study development, and of the severe forms, possible through the addressability of the serious forms of this disease to Sibiu County Clinical Emergency Hospital, by taking over some severe cases from the private sector and as a result of the increased consumption of alcohol.

According to the data in the literature, in our study as well, we found a predominance of males, with a ratio of 1.22/1.

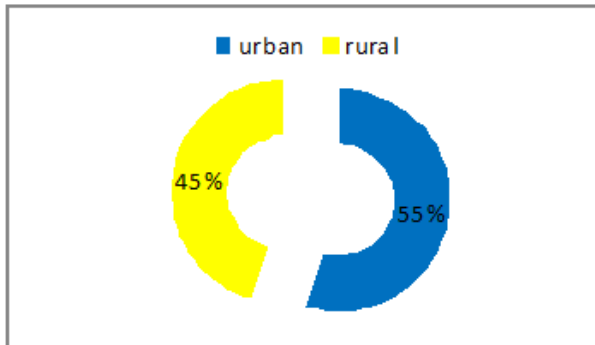
The maximum incidence was reported in the age

²Corresponding author: Maria Rotaru, B-dul. Corneliu Coposu, Nr 2 – 4, Sibiu, România, E-mail: mrotaru07@gmail.com, Phone: +40269 215050
Article received on 08.12.2014 and accepted for publication on 18.03.2015
ACTA MEDICA TRANSILVANICA June 2015;20(2):77-79

CLINICAL ASPECTS

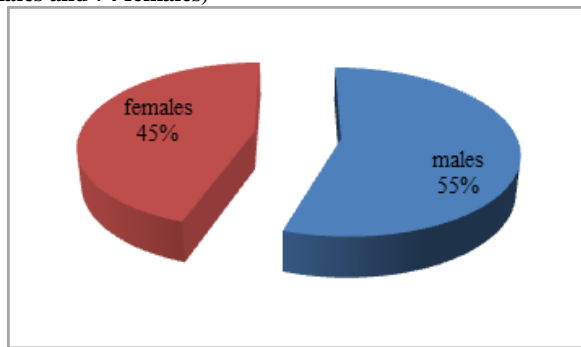
group of 70-79 years old, followed by the age group of 50-59 years old.

Figure no. 1 Cases distribution according to the patients' area of the residence



Of the total number of 165 cases, we found out that the disease is more frequently encountered in the male gender, 91 (55.15%) cases (figure no. 2).

Figure no. 2. Cases' distribution according to gender (91 males and 74 females)



The maximum incidence was reported in the age group of 70-79 years old, followed by the age group of 50-59 years old.

In our study, 165 patients were diagnosed with acute pancreatitis:

- 8 (4.84%) patients aged 20-29 years old;
- 27 (16.36%) patients aged 30-39 years old;
- 27 (16.36%) patients aged 40-49 years old;
- 29 (17.57%) patients aged 50-59 years old;
- 21 (12.72%) patients aged 60-69 years old;
- 35 (21.21%) patients aged 70-79 years old;
- 18 (10.9%) patients aged 80-89 years old.

From the history of patients, we have established as an etiologic factor, gallstone in 47.27% of cases, alcohol in 38.18% of cases, metabolic pancreatitis - dyslipidemia in 14.54% of cases. The literature describes the predominance of biliary etiology in pancreatitis (figure no. 3).

The clinical classification of the severity of acute pancreatitis was made based on the Atlanta criteria. Regarding the severity of pancreatitis, 52.12% of pancreatitis cases were mild and 47.87% were severe forms. The increased number of severe pancreatitis within our study group compared to the literature (80% mild acute pancreatitis and 20% severe acute pancreatitis) may be due to the inclusion in the study of only the cases within the surgical and intensive care units knowing that the mild non-biliary forms of pancreatitis are hospitalized in medical clinics; due to the taking over of the severe cases from the private medical sector, to the increased consumption of

alcohol, and probably to the development of the diagnosis procedures and the accumulation of experience in the diagnosis of this pathology (figure no. 4.)

Figure no. 3. Cases' distribution according to etiology

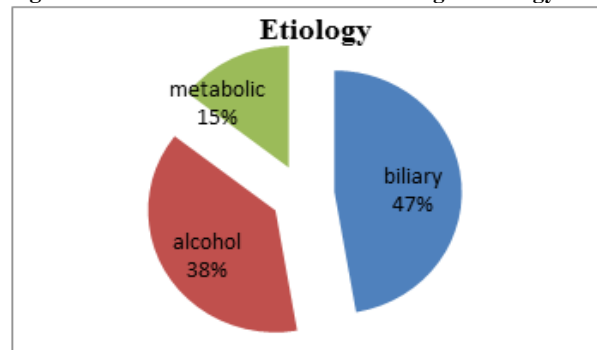
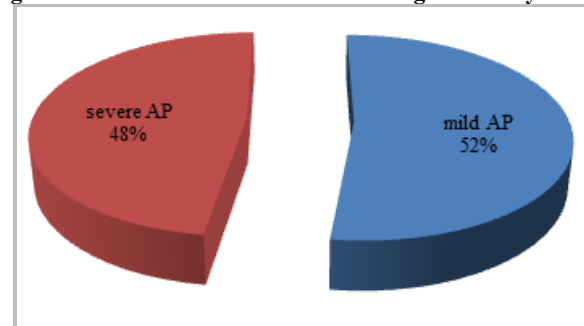


Figure no. 4. Cases' distribution according to severity



All the cases in both groups were assessed using the bio-clinical scores, Ranson and APACHE II.

DISCUSSIONS

The incidence of acute pancreatitis varies by region. In 2004, in Germany, it was established an incidence of 22 cases per 100 000 inhabitants, while in Denmark an incidence of 28 cases per 100 000 inhabitants.(9) The incidence in Romania was estimated to 20 cases per 100 000 inhabitants per year.(10)

In the last two decades, the incidence of acute pancreatitis had a tendency to increase to 30-50 cases per 100 000 inhabitants per year in some countries, probably due to increased alcohol consumption and frequency of gallstones etiology.(2) The mortality of uncomplicated forms (edematous pancreatitis) is below 1%, while in the severe forms, with pancreatic and peripancreatic necrosis, mortality remains high, 10-20%.(9)

Severe acute pancreatitis (SAP) is one of the main causes of intra-abdominal hypertension (IAH) of retroperitoneal origin that can lead to multiple organ dysfunction. Mortality in SAP remains high, between 15% and 30% and it is the consequence of pancreatic necrosis infection and multiple systems organic failure (MSOF). Early recognition of severe forms is essential in the management of acute pancreatitis and may reduce the morbidity and mortality associated with this disease. A major challenge in the evaluation of acute pancreatitis is to identify the most suitable predictive markers of its evolution towards severity.

For a better prevention of severe acute pancreatitis, it is essential to identify some independent risk factors, so as to be able to perform or modify in time the treatment of the high risk patients, before the occurrence of organ failure and sequelae.

Surgical decompression is generally accepted as a therapeutic measure of the patients with severe acute

pancreatitis and abdominal compartment syndrome. So far, the indication of the decompression timing remains unknown and there are no experimental data, despite of the high death rate in these patients.

CONCLUSIONS

The incidence of acute pancreatitis and of severe forms is increasing.

It is essential to identify some independent risk factors, so that to be possible to perform or to modify in due time the treatment of high risk patients, before the occurrence of organ failure and sequelae.

The optimal timing of surgical decompression, the invasive method used, as well as their effect in influencing the clinical evolution of acute pancreatitis should be further carefully studied.

Acknowledgement:

This paper was supported by the project "Sustainable performance in doctoral and post-doctoral research PERFORM", Contract no. POSDRU/159/1.5/S/138963, project co-funded from European Social Fund through the Sectoral Operational Programme Human Resources 2007 – 2013.

REFERENCES

1. Bradley EL III. A clinically based classification system for acute pancreatitis. Summary of the International Symposium on Acute Pancreatitis. Arch Surg. 1993;128(5):586-90.
2. Grigoraş I. Pancreatita acută - forma severă. Jurnalul de Chirurgie, Iaşi. 2005;1(1):9-20
3. Lipsett PA. Acute Pancreatitis. Textbook of Critical Care. 5th ed. Mitchell P. Fink, Edward Abraham, Jean-Louis Vincent, Patrick M. Kochanek, editors. 2005;122:1021-32.
4. Lipsett PA. Acute Pancreatitis. Textbook of Critical Care. 6th ed. Mitchell P. Fink, Edward Abraham, Jean-Louis Vincent, Patrick M. Kochanek, editors. 2011;104:785-94.
5. Moon MR, Luchette FA, Steer ML. Manual of Intensive Care Medicine. 3rd ed. Richard S. Irwin, James M. Rippe, editors. 2000;138:697-701.
6. Anderson R, Eckerwall G, Haraldsen P. Novel Strategies for the Management of Severe Acute Pancreatitis, Yearbook of Intensive Care and Emergency Medicine, edited by JL. Vincent, Springer Verlag; 2000. p. 379-389.
7. Cochior D, Cochior M. Actualităţi în fiziopatologia pancreatitei acute, ISBN-973-8067-84-7. Editura Electra; 2003.
8. Mofidi R, Suttie SA, Patil PV, Ogston S, Parks RW. The value of procalcitonin at predicting the severity of acute pancreatitis and development of infected pancreatic necrosis: systematic review. Surgery. 2009;146(1):72-81.
9. Sekimoto M, Takada T, Kawarada Y, et al. JPN Guidelines for the management of acute pancreatitis: epidemiology, etiology, natural history, and outcome predictors in acute pancreatitis. J Hepatobiliary Pancreat Surg. 2006;10-24.
10. <https://ro.scribd.com/doc/13268198/Pancreatite>.