

## EPIDEMIOLOGICAL ASPECTS OF PANCREATIC PSEUDOCYST

German Mihai\*, Domuta Maria, Maghiar Adrian

\*University of Oradea, Faculty of Medicine and Pharmacy, First December Square, No. 10, Oradea, Romania, e-mail: [germanmihai@gmail.com](mailto:germanmihai@gmail.com)

### Abstract

*Pancreatic pseudocyst is a consequence of acute or chronic pancreatitis, more rarely of a pancreatic trauma. Regardless of etiology, incidence of pancreatic pseudocyst is relatively low. Pancreatic pseudocyst tend to be more common in chronic pancreatitis compared with acute pancreatitis, with an incidence of 30% to 40%, and more frequently in alcohol-induced chronic pancreatitis. Gender related prevalence is increased in male patient with a age peak at 45-54 years. Some authors report a significant increase in morbidity and mortality in patients with pancreatic pseudocyst in relation with parameters such as age, Ranson score of previous episode of acute pancreatitis, etiology of pancreatitis, nutritional status and surgical technique.*

**Key words:** pancreatic pseudocyst, epidemiology

### INTRODUCTION

Pancreatic pseudocyst occurs more frequently than acute fluid collections and requires more time to develop, and is a consequence of acute or chronic pancreatitis, more rarely of a pancreatic trauma. Regardless of etiology, incidence of pancreatic pseudocyst (PCP) is relatively low, 1.6% - 4.5%, or 0.5-1 per 100 000 adults per year according to some authors (Funariu G, 1994, S. Habashi, P.V. Draganov, 2009). Reported prevalence varies from 5% to 70% depending on the severity of the pancreatitis, but recent studies show a decrease in FCP in relation to acute pancreatitis, the overall incidence of PCP as a complication of acute pancreatitis being 5 - 12% (Popovici A., 1997, S.Habashi, P. V. Draganov, 2009). PCP tend to be more common in chronic pancreatitis compared with acute pancreatitis, with an incidence of 30% to 40% reported in the literature, and more frequently in alcohol-induced chronic pancreatitis (S. Habashi and P. V. Draganov, 2009).

Major risk factors for pancreatitis and PCP are gallstones and alcoholism. The increased incidence was correlated with chronic pancreatitis and alcohol consumption in several countries, but in other countries the incidence of PCP after acute pancreatitis is 3 times higher than PCP in relation to chronic pancreatitis. Pancreatic trauma represents 2-5% of abdominal contusions and tend to increase as it grows the severity of road accidents, occupational and sports accidents, and consequently increase the incidence of posttraumatic PCP (Proca E., 1986, Grigorescu M., Lencu M., 1990).

Most studies have communicated a higher incidence in males, despite an increased incidence of biliary disease in women, and most commonly in patients aged between 35 and 58 years (G. Crisan, 1984, Proca E., 1986, Grigorescu M., Lencu M., 1990). By age PCP incidence rate after acute pancreatitis reaches a peak in the decade 35-44 years and in relation to chronic pancreatitis in the decade 45-54 years. The incidence in children is much lower, the etiology is represented in particular by the abdominal trauma (Grigorescu M., Lencu M., 1997, Kloppel G., 2000).

PCP uncomplicated mortality is very rare, postoperatively was reported a rate lower than 1%. Instead, there is increased mortality rates of over 50% for PCP complicated, most commonly referred to bleeding and superinfection. (S. T. Barbu, A. Andren-Sandberg, 2008, S. Habashi, P.V. Draganov, 2009).

#### **MATERIAL AND METHOD**

The study is based on epidemiological analysis of 117 patients diagnosed with pancreatic pseudocyst, and admitted to the Surgical Clinic of Oradea County Hospital and Oradea Pelican Hospital in the period 2002-2010. We took into account demographic aspects, etiological aspects and alcohol consumption, clinical and biological aspects, imaging, therapeutic methods, disease progression, morbidity and mortality rates. Statistical processing of data collected from patient observation charts summarized in research fiches was organized into a Microsoft Excel 2003 database. For statistical analysis data were imported into a EpiInfo database. Data obtained were statistically analyzed and quantified in terms of epidemiological aspects of pancreatic pseudocyst.

#### **RESULTS AND DISCUSSIONS**

Of all patients, 23 (17.55%) were female and 94 (82.45%) male (Fig.1), this gender difference maintaining on all years of study (fig.2)

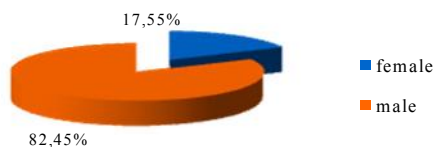


Fig.1.Gender distribution.

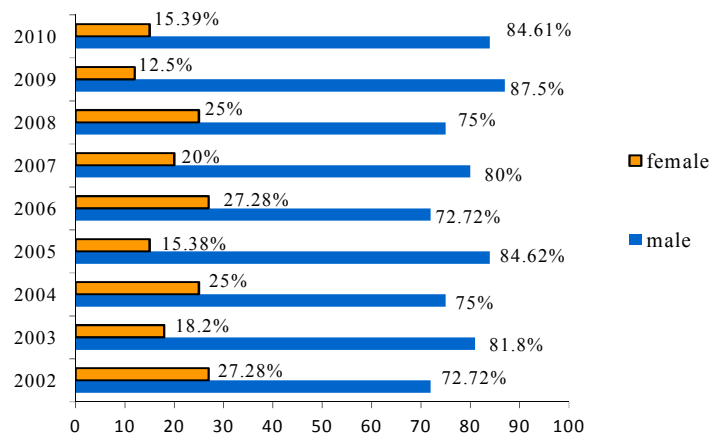


Fig 2. PCP distribution by gender per study years.

The average age in the group of patients studied was 53.03 years (35 to 71 years) with a predominance decades of life 40-49 and 50-59 (fig.3).

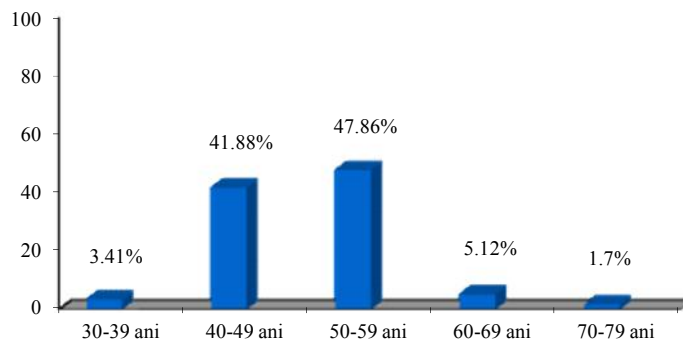


Fig.3. FCP graphical distribution by age.

Of the 117 patients, 67 (57.27%) were from urban areas and the remaining 50 (43, 73%) from rural areas, maintaining the difference in the entire period study (fig.4).

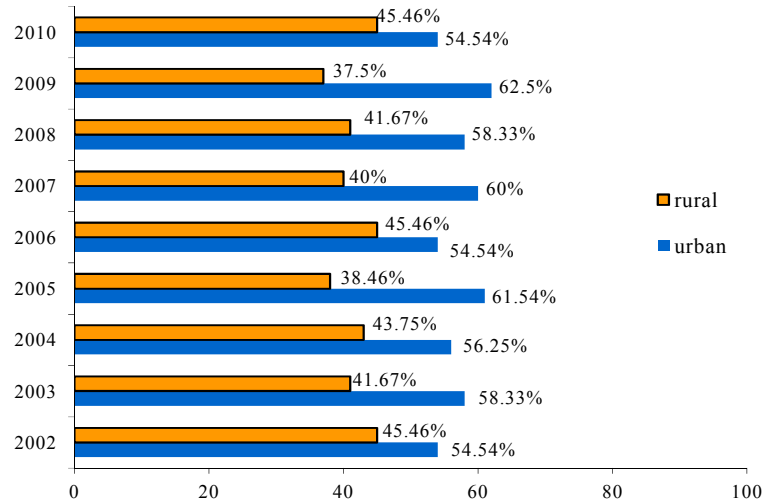


Fig.4. FCP graphical distribution by area of provenience.

Of the total of 117 patients with PCP, 89 patients (76.06%) were active individuals (Fig.5). Considering the conditions of life and work, 83 patients (70.94%) had proper living conditions. Among active individuals 73 patients (62.39%) had secondary education and of these 39 patients (33.33%) worked in contaminant environment. Among inactive individuals, 19 (16.24%) patients were unemployed, and 9 (7.69%) pensioners (Fig.5).

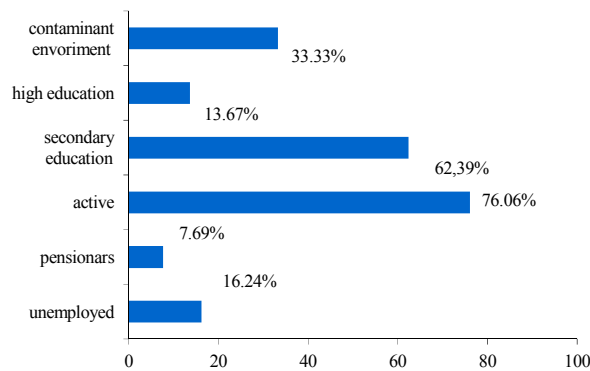


Fig.5. Distribution of patients by activity, educational level and working conditions.

In terms of etiology, alcoholic pancreatitis was identified as the cause of PCP in 89 (76.06%) cases, biliary pancreatitis in 25 (21.36%) cases, abdominal trauma in 3 (2.56%) cases (Fig.6). Anamnestic, 109 (93.16%) patients were identified with a previous form of pancreatitis: acute (23.93%), chronic (43.58%) or recurrent episodes of pancreatitis (29.91%).

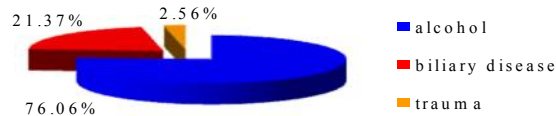


Fig. 6. Etiology of PCP.

In relation with age, the preponderance of cases with acute pancreatitis was observed in patients aged 35-54 years and those with chronic pancreatitis between 45-64 years (Fig.7). Biliary diseases were the etiologic factor PCP more common in women, affecting patients aged 38-52 years, and alcohol consumption was more common in men aged 44-68 years.

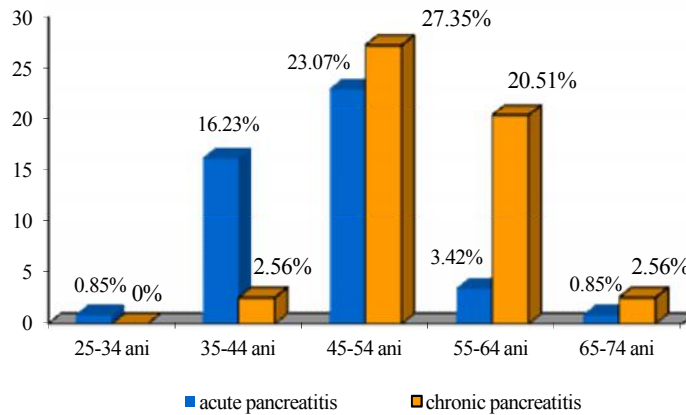


Fig.7. Prevalence of PCP after acute and chronic pancreatitis according to age.

Postoperative evolution was favorable in 53 (61.62%) cases of patients operated, overall morbidity rate was 24.78% (29 patients) in the study group. There were 4 deaths (3.41%) that occurred in debilitated patients presenting complicated superinfected PCP with appearance of toxic-septic shock and multiple organ failure (fig.8).

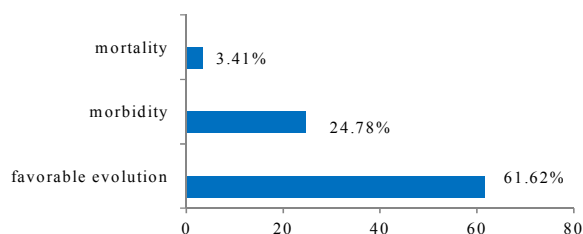


Fig.8. Morbidity and mortality of PCP.

## CONCLUSIONS

Of cystic lesions of the pancreas, PCP remains the most common, representing almost 75% of these lesions. PCP actual incidence is difficult to determine and we can not have a definitive conclusion because evolution of PCP can be asymptomatic in small lesions, so PCP can go unnoticed or is discovered absolutely incidentally within some routine investigations. The main risk factors in the occurrence of PCP are alcoholism and cholelithiasis, the formation of PCP being less common after acute pancreatitis compared with chronic pancreatitis, and more common in alcoholic chronic pancreatitis.

Despite a higher incidence of biliary disease in women, 82.45% of the total number of patients in our study were male, among which is otherwise more commonly encountered chronic alcohol consumption. PCP Global incidence rate reached one peak in the decades 40-49 and 50-59, and in relation to chronic pancreatitis between 45-64 years. Increased incidence of PCP in active patients from urban areas could be related to a lifestyle governed by physical stress and psychological consequences as inappropriate dietary habits and increased alcohol consumption.

Overall morbidity rate was 24.78% and death occurred in 3.41% cases. Sex was not identified as a significant predictor regardless of the method of treatment, morbidity rate being 21.73% in the female patients and 25.53% in the male group. However in terms of age, there was an increase in the morbidity rate in patients over 50 years (24.78%), especially among debilitated patients with chronic alcoholism and poor nutritional status.

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