

Acute Biliary Pancreatitis: Epidemiological, Clinical and Paraclinical Profile at the François Quesnay Hospital Center of Mantes-la-Jolie

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Abstract

Objective: This paper aims to determine the hospital frequency and describe the epidemiological, clinical and paraclinical characteristics of acute biliary pancreatitis at the François Quesnay Hospital Center of Mantes-la-Jolie. **Patients and Methods:** This was an observational, descriptive and cross-sectional study with retrospective data collection. The study was conducted from January 2019 to September 2024 at the François Quesnay Hospital Center. All patients over 18 years of age admitted to the gastroenterology ward with a diagnosis of acute biliary pancreatitis were included, confirmed according to the usual diagnostic criteria combining suggestive abdominal pain, enzymatic elevation, and/or compatible imaging. Sociodemographic, clinical, biological, and radiological data were collected from medical records. **Results:** The hospital frequency was 3.18%. A female predominance was observed, with a mean age of 56.97 ± 21.30 years (range: 18 - 94 years). Abdominal pain was the main reason for admission, presenting with a typical acute pancreatitis pattern in 59.2% of cases. Lipasemia was elevated in 92.2% of cases. Abdominal ultrasound and MR cholangiopancreatography (MRCP) established a biliary origin in nearly all patients, showing gallstones or vesicular sludge, or stones in the common bile duct. Abdominal CT scan revealed pancreatic lesions in 69.8% of cases. Biliopancreatic endoscopic ultrasound, performed in 77 patients, demonstrated gallstones in 32.5% of cases. **Conclusion:** Acute biliary pancreatitis remains a frequent and clinically significant condition, requiring a rigorous diagnostic approach and optimized multidisciplinary management.

Keywords

Acute Biliary Pancreatitis, Hospital Prevalence, François Quesnay Hospital Center, Mantes-la-Jolie

1. Introduction

Acute pancreatitis (AP) is a commonly encountered condition in gastroenterology [1]. It is a cosmopolitan disease affecting both sexes and generally requiring hospital management. This condition involves inflammation of the pancreatic gland secondary to autodigestion, triggered by premature activation of pancreatic enzymes [2].

Over the past few decades, the incidence of AP has increased significantly, particularly in industrialized countries [3]. Worldwide, it affects more than 17 million individuals and ranks 35th among the most prevalent diseases globally [4]. It therefore represents a major public health concern, both in terms of its frequency and its socioeconomic impact. Nearly 15,000 new cases are diagnosed annually in France and 130,000 in the United States. In 2012, AP was identified as the leading cause of admission for abdominal emergencies in the Western world and the leading cause of gastroenterology-related hospitalization in the United States, with estimated hospitalization costs of USD 2.6 billion [4]-[6].

The main etiologies are dominated by biliary and alcoholic causes, accounting for approximately 50% and 30% of cases, respectively [7]. Acute biliary pancreatitis (ABP) is distinguished by specific diagnostic and therapeutic features related to stone migration and its associated complications.

In this context, the aim of the present study was to determine the hospital frequency of ABP and to describe its epidemiological, clinical and paraclinical characteristics at the François Quesnay Hospital Center.

2. Patients and Methods

This was an observational, descriptive and cross-sectional study with retrospective data collection. The study was conducted from January 2019 to September 2024 at the François Quesnay Hospital Center. The general study population consisted of all patients admitted to hospital with acute pancreatitis. Inclusion criteria encompassed all patients aged over 18 years admitted to the gastroenterology ward with a diagnosis of acute biliary pancreatitis, including those who had experienced a biliary event before or after cholecystectomy (post-cholecystectomy pancreatitis to residual or recurrent gallstones). Patients with non-lithiasic acute pancreatitis were excluded.

Consecutive sampling was performed for patients meeting the inclusion criteria. All patients were registered in the hospital database; each group of records was classified according to diagnoses and identified through a coding system. This

process enabled the selection of relevant medical records, and the collected data were anonymized and entered into a Microsoft Excel spreadsheet.

The study variables supported a three-pronged investigation: epidemiological, clinical and paraclinical. The epidemiological component was based on analysis of sociodemographic variables and lifestyle factors for each included patient. This was followed by a clinical investigation examining medical history and clinical signs, and finally a paraclinical investigation encompassing biological parameters (serum lipase) and imaging modalities (abdominal ultrasound, abdominal CT scan, MRCP and biliopancreatic endoscopic ultrasound). Abdominal ultrasound, MRCP and endoscopic ultrasound were performed to detect lithiasis within the biliopancreatic ducts or sludge vesicular a key determinant in establishing the biliary origin of pancreatitis. Abdominal CT scan was used to assess pancreatic involvement and characterize the extent of pancreatic lesions.

Microsoft Excel 2021 was used for data entry and processing. The Shapiro-Wilk test was applied to assess the normality of distributions. Quantitative variables were expressed as means with standard deviation (SD). Qualitative variables were expressed as absolute frequency (n), percentage (%) and ratio.

3. Results

Of 3077 hospitalized patients, 103 presented with acute pancreatitis, of whom 98 had a biliary origin, yielding a hospital frequency of 3.18%. Biliary etiology accounted for 95.15% of all acute pancreatitis cases.

A female predominance was observed (68.4%), with a sex ratio of 0.46. The mean age was 56.97 ± 21.30 years (range: 18 - 94 years). The most represented age groups were those aged 25 - 49 years, followed by those aged 50 - 74 years (**Figure 1**).

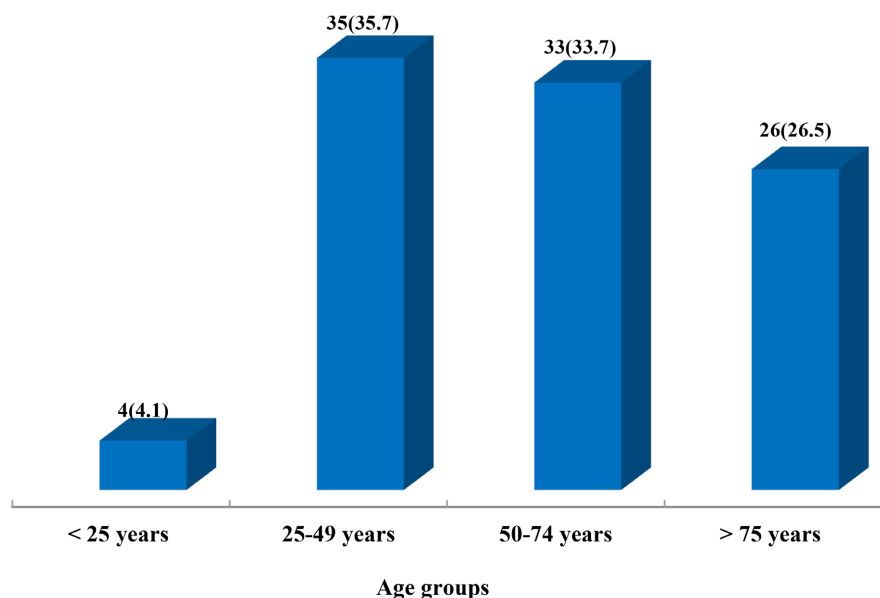


Figure 1. Distribution of patients by age group.

Regarding associated factors, 54.1% of patients were on regular medication, followed by tobacco use (37%) and alcohol consumption (26.5%) (**Figure 2**). Medical and surgical histories were infrequent; type 2 diabetes mellitus was identified in 18.4% of patients with ABP (**Figure 2**).

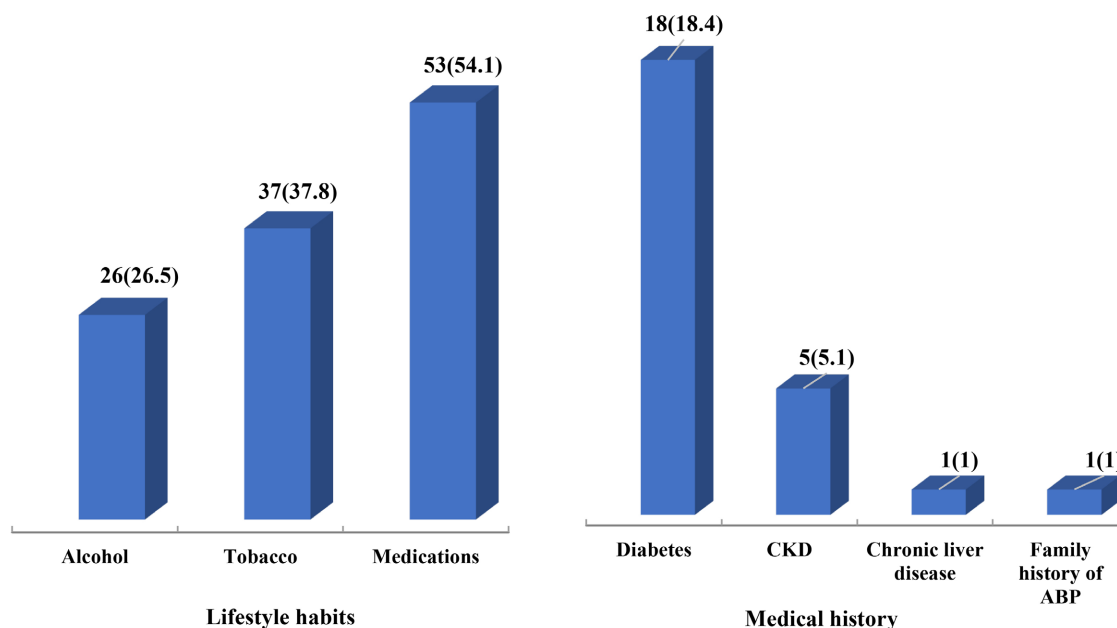


Figure 2. Distribution of the population by lifestyle habits and medical history.

From a clinical standpoint, abdominal pain was the cardinal symptom, presenting with a typical pancreatitis pattern in approximately 60% of cases and associated with vomiting in more than half of cases. Nearly 46.9% of patients were overweight or obese (**Figure 3**).

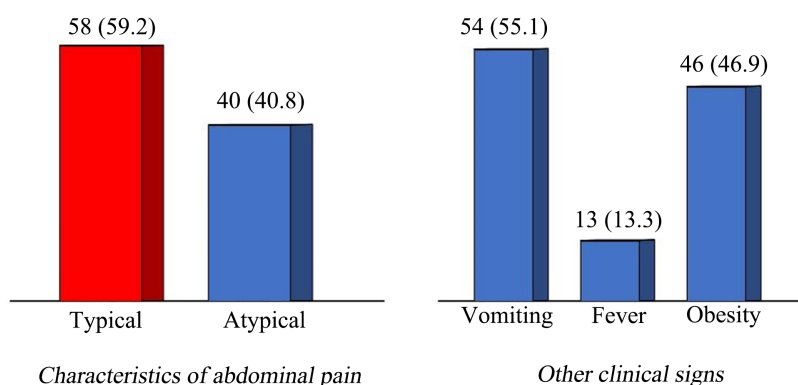


Figure 3. Distribution according to clinical signs.

Serum lipase was elevated in the majority of cases (92.2%). Abdominal ultrasound identified gallstones (or biliary sludge) in 81.6% of patients. MRCP, performed as a complementary examination in 21.4% of patients, demonstrated biliary lithiasis in 76.2% of those examined, thereby resolving diagnostic uncertainty

regarding the presence of gallstones. Beyond lithiasis, MRCP identified distal common bile duct and pancreatic duct strictures in 4.75% of cases (**Table 1**). All patients underwent abdominal CT scan; the pancreas appeared normal in 30.2% of cases and abnormal in 69.8%.

Table 1. Distribution according to abdominal ultrasound and MRCP findings.

	n	%
Abdominal Ultrasound (n = 87)		
Normal	16	18.4
Gallstones	71	81.6
MRCP (n = 21)		
Normal	3	14.3
Gallstones	16	76.2
Distal common bile duct stricture	1	4.75
Pancreatic duct stricture	1	4.75

Endoscopic ultrasound was performed as a second-line investigation in 77 patients (78.5%). Results were normal in 48 patients (62.3%), while impacted stones were identified in 25 patients (32.5%) (**Table 2**).

Table 2. Distribution according to endoscopic ultrasound findings.

Endoscopic Ultrasound	n	%
Normal	48	62.3
Gallstones	25	32.5
Other*	4	5.2
Total	77	100

*Other findings: common bile duct stricture, pancreatic necrosis, necrotic collection.

4. Discussion

The present study reveals a hospital prevalence of acute biliary pancreatitis (ABP) of 3.18%, with a marked female predominance and a mean age of 56.97 years. These findings are consistent with trends broadly reported in the international literature, where acute pancreatitis represents a frequent cause of gastroenterology-related hospitalization, with an incidence that has been continuously rising over recent decades [1] [3]. This progression is largely attributed to the epidemiological transition and the increasing prevalence of metabolic risk factors, particularly obesity and metabolic syndrome, which promote the formation of gallstones [3] [4].

In this context, the exceptionally high proportion of biliary-etiology pancreati-

tis observed in our series (95.15%) appears higher than figures typically reported in the literature, where this etiology generally accounts for 40% to 60% of cases [1] [7]. This discrepancy may be explained by the monocentric nature of our study, the pattern of hospital recruitment, and improved access to diagnostic tools enabling identification of biliary origin. From a pathophysiological standpoint, acute biliary pancreatitis most commonly results from transient or persistent obstruction of the ampulla of Vater by a stone, leading to increased intraductal pressure and premature activation of pancreatic enzymes, thereby initiating the auto-digestion process [2] [6].

Furthermore, the female predominance observed in our study is entirely consistent with published literature, which highlights the determining role of hormonal factors in the pathogenesis of gallstones [8] [9]. Estrogens promote cholesterol supersaturation of bile and impair gallbladder motility, creating favorable conditions for stone formation [10]-[12]. This risk is further increased in multiparous women or those exposed to hormonal therapies, particularly oral contraceptives [9]-[12]. The mean age of 56 years in our series is also consistent with international observations, reflecting the cumulative influence of advancing age on stone formation and the increasing incidence of acute pancreatitis with aging [3] [9].

Analysis of associated factors in our population highlights the role of certain lifestyle habits and comorbidities, notably smoking, alcohol consumption, regular medication use and diabetes. While alcohol remains a major cause of acute pancreatitis in certain series, its involvement appears secondary in our cohort, confirming the predominance of the lithiasic mechanism [7]. Obesity, present in nearly half of the patients, represents a particularly important factor, not only in the genesis of gallstones, but also in worsening prognosis, owing to its association with more severe forms of the disease and an increased risk of systemic complications [8].

From a clinical perspective, abdominal pain remains the cardinal symptom, although its typical presentation was observed in approximately 60% of cases, in keeping with our results [7] [13]. This clinical variability underscores the need for a rigorous diagnostic approach combining clinical, biological and radiological data. Atypical presentations, particularly in elderly patients or those with multiple comorbidities, may delay diagnosis and adversely affect prognosis [7].

In this setting, laboratory investigations play an essential role, with elevated serum lipase serving as a key diagnostic element. Our results, demonstrating elevation in more than 90% of cases, confirm its high sensitivity, in line with published data [14]-[16]. However, laboratory tests alone do not identify the etiology, justifying the use of imaging.

In this regard, imaging plays a decisive role in the management of acute biliary pancreatitis. Abdominal ultrasound, as the first-line examination, can detect the majority of gallstones, as demonstrated in our study with a detection rate of 81.6%, consistent with international recommendations [17]. However, its sensitivity may be limited in cases of microlithiasis or obesity, which explains the use of comple-

mentary examinations such as MRCP and endoscopic ultrasound. These techniques offer superior diagnostic performance for the detection of small or impacted stones in the common bile duct [17]. Furthermore, abdominal CT scan remains the reference examination for severity assessment, enabling identification of local complications such as pancreatic necrosis or peripancreatic fluid collections [15]. In our series, the high frequency of CT scan abnormalities reflects notable pancreatic involvement, underscoring the need for close monitoring and appropriate management.

In this perspective, the therapeutic management of acute biliary pancreatitis relies on a multidisciplinary approach integrating initial symptomatic treatment, management of complications and etiological treatment. Relief of biliary obstruction—particularly through endoscopic retrograde cholangiopancreatography in the setting of associated cholangitis constitutes a key step [6].

Finally, although this study provides relevant data on the profile of acute biliary pancreatitis in a French hospital center, certain limitations must be acknowledged, notably the retrospective and monocentric design. Nevertheless, these findings contribute to a better understanding of the characteristics of this condition and highlight the importance of an appropriate diagnostic and therapeutic strategy.

5. Conclusion

Acute biliary pancreatitis remains a frequent and clinically significant condition at the François Quesnay Hospital Center. Our results confirm the predominant role of biliary etiology in acute pancreatitis and demonstrate epidemiological and clinical profiles consistent with international data. They further underscore the importance of early, coordinated and multimodal management in order to improve prognosis and reduce the risk of recurrence.

Declaration of Generative AI and AI-Assisted Technologies in Manuscript Preparation

During the preparation of the manuscript, the authors used Claude (Anthropics) only for limited editing of certain sentences to revise and improve clarity, but mainly for the English translation, since the original text was written in French. No AI tool was used to generate research content, analyze data, interpret results, or prepare references; the ideas, argument, and intellectual contribution of the paper are entirely original. All AI-assisted suggestions were reviewed, revised where necessary, and approved by the authors, who take full responsibility for the final manuscript.

Author Contributions

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Conflicts of Interest

The authors declare no conflict of interest.

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Abbreviations

ABP	Acute biliary pancreatitis
MRCP	Magnetic Resonance Cholangiopancreatography