

Overview of Pancreatic Diseases at the Regional University Hospital Center of Ouahigouya

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ABSTRACT

Introduction: Pancreatic pathology mainly includes inflammatory conditions (acute or chronic) and tumors (benign or malignant).

In Africa, the diagnosis of pancreatic diseases remains challenging and often overshadowed by hepatobiliary and other digestive disorders, due to various factors. This study was conducted to provide an overview of these conditions at the Regional University Hospital Center of Ouahigouya (CHUR/OHG).

Methodology: This was a cross-sectional, descriptive study conducted over a 10-year period (from January 1th, 2014, to December 31th, 2023), using a retrospective data collection approach. All patients admitted to the Hepato-Gastroenterology and General Surgery departments of CHUR/OHG with a confirmed diagnosis of pancreatic disease were included. Endocrine pancreatic conditions were excluded from the study.

Results: The study population consisted of 33 patients, representing 0.33% of total admissions. The average age was 58.6 years, with the 50–60-year age group accounting for 30% of the cohort. The sex ratio was 3.12, with 25 men and 8 women. The average time to consultation was 3.8 months. The majority of patients (72.7%) came from rural areas.

Asthenia (94%), abdominal pain (88%), weight loss (84%), and jaundice (82%) were the most common presenting symptoms. On physical examination, an enlarged gallbladder was noted in 72.7% of cases, and an abdominal mass in 63.6%. Malignant pancreatic tumors were suspected in 23 patients (70%), chronic pancreatitis in 15%, acute pancreatitis in 12%, and benign-like lesions in 9%. Surgical management involved biliodigestive bypass procedures in 5 patients, accounting for 21% of those with malignant pancreatic lesions.

Conclusion: Pancreatic conditions appear to be rare and are often diagnosed late in our clinical setting, with malignant tumor-like lesions being predominant. Management is primarily symptomatic, focusing on palliative care.

Keywords

Pancreas, Acute pancreatitis chronic pancreatitis, Pancreatic tumors.

Introduction

The pancreas is a unique and vital organ with amphicrine properties. It is located deep within the body and is difficult to

examine physically [1]. Pancreatic pathology primarily includes inflammatory diseases (both acute and chronic) and tumors [2]. The global incidence of acute pancreatitis is estimated at 40 to 50 cases per 100,000 adults per year [3]. The prevalence of chronic pancreatitis is estimated at 4.9 per 100,000 inhabitants [4]. Pancreatic cancer is the seventh leading cause of cancer-related

deaths [5], with approximately 750,000 new cases projected by 2035 [6]. According to the Global Cancer Observatory (GLOBOCAN) in 2022, pancreatic cancer ranks as the seventh cause of death among oncological diseases in Europe [7].

In Burkina Faso, few studies have focused on pancreatic diseases. According to a study conducted in 2017 at the University Hospital Center SOUROU SANOU, the hospital frequency of pancreatic conditions was 0.32% [8]. To date, no data is available on pancreatic conditions at our hospital. This study was undertaken to assess the spectrum of pancreatic diseases at CHUR/OHG, the referral hospital for the northern region of Burkina Faso.

Methodology

Our study was conducted in Burkina Faso in the city of Ouahigouya at the Regional University Hospital Center, specifically within the General Surgery and Hepato-Gastroenterology departments.

This was a cross-sectional study with retrospective data collection. The study population included all patients hospitalized in the Hepato-Gastroenterology and General Surgery departments during the study period.

Patients were included if clinical and paraclinical investigations confirmed a pancreatic condition. Unusable or incomplete medical records were excluded. Patients who were simultaneously diagnosed with diabetes and chronic pancreatitis or pancreatic cancer were also excluded.

Data were collected using an anonymous survey form. Patient medical records served as the primary data source. Data entry was performed using Microsoft Word 2019 on a personal computer. Statistical analysis was conducted using the French version of Epi Info 7.2.5.0 software. For ethical considerations, the study received approval from the relevant hospital authorities.

Results

Frequency

From January 1, 2014, to December 31, 2023, a total of 10,024 patients were hospitalized, including 4,021 in the Hepato-Gastroenterology department and 6,003 in General Surgery. During this period, 33 cases of pancreatic diseases were identified, accounting for 0.33% of all admissions. These included 23 cases of malignant pancreatic tumors, 1 case of a benign tumor, 4 cases of acute pancreatitis, and 5 cases of chronic pancreatitis.

Overall Socio-demographic Data

Male patients accounted for 75.75% (25/33) versus 24.25% (8/33) for females, yielding a sex ratio of 3.12. The average age was 58.63 ± 2.88 years, with the 30–60 age group being the most represented at 57.57% (19/33). Most patients were farmers, as shown in Table 1.

Malignant Tumors

We identified 23 cases of malignant pancreatic tumors, representing 0.22% of hospital admissions, or an average of 2.2 cases per year.

The mean age was 66 ± 3 years (range: 59–72). Male patients accounted for 81.8%, giving a sex ratio of 4.5. The average consultation delay was 4.3 months (range: 3–5 months).

All patients presented with jaundice. 52.1% were at stage 4 of the WHO performance status, and 18 patients showed signs of malnutrition. On physical examination, all patients had an enlarged gallbladder; 86.9% had an abdominal mass, 73.9% hepatomegaly, 82.6% scratch lesions, and 65.2% ascites.

Abdominal ultrasound was performed in 14 patients, showing dilatation of the Wirsung duct and intra-/extra-hepatic bile ducts in 52% of cases. Abdominal CT scans were performed in 3 patients, revealing pancreatic masses in all cases.

All patients received analgesic treatment. Surgical treatment was performed in 21.7% (5/23), consisting of biliodigestive bypass. The mortality rate was 45.45%. Table 2 summarizes the clinical and paraclinical features of these patients.

Table 1: Distribution of patients by occupation.

Occupation	Number	Percentage
Farmer	19	57.58%
Salaried worker	2	6.06%
Housewife	8	24.24%
Informal sector	2	6.06%
Other	2	6.06%
Total	33	100%

Table 2: Clinical and Paraclinical characteristics of pancreatic tumors.

Risk factors / Clinical Signs	n	%
Alcohol	12	52.17%
Tobacco	11	47.82%
High-fat diet	9	39.13%
Alcohol + tobacco	3	13.04%
WHO General Status		
Stage 2	1	4.34%
Stage 3	9	39.13%
Stage 4	12	52.17%
Jaundice	23	100%
Malnutrition	18	78.26%
Anemia	10	43.47%
Dehydration	6	26.06%
Lower limb edema	5	21.73%
Physical Signs		
Enlarged gallbladder	23	100%
Abdominal mass	20	86.95%
Hepatomegaly	17	73.91%
Scratch lesions	19	82.60%
Ascites	15	65.21%
Imaging		
Wirsung duct dilation (US)	12	84.61%
Intra/extrahepatic bile duct dilation	12	84.61%
Pancreatic mass (CT scan)	3	100%
Deep adenopathies (CT scan)	3	100%

Benign Tumors

One case of a pancreatic cyst was reported, accounting for 3% of pancreatic conditions. The patient was a 43-year-old male who presented with abdominal pain, without jaundice or abdominal mass. The diagnosis was made through ultrasound and abdominal CT scan.

Acute Pancreatitis

Four (4) cases of acute pancreatitis were found, representing 12.12% of pancreatic conditions. All patients were male, with a mean age of 37.7 ± 5.9 years (range: 18–56).

The average consultation delay was 1.5 ± 0.28 days (range: 0.5–2.4 days). Three patients were classified as stage 3 on the WHO performance scale, and physical examination findings were minimal in all cases.

Serum lipase levels were measured in all patients and were at least 3 times above the normal range.

Abdominal ultrasound revealed peri-pancreatic fat in all cases. Treatment consisted mainly of lifestyle and dietary modifications and analgesics, with or without antibiotics. The clinical course was favorable for all patients. Table 3 summarizes the clinical and paraclinical characteristics.

Table 3: Clinical and biological features of acute pancreatitis.

Symptom	n	%
Abdominal pain	4	100%
Asthenia	2	50%
Pruritus	1	25%
Jaundice	1	25%
Habits		
Alcohol	3	75%
Tobacco	2	50%
Alcohol + tobacco	2	50%

Lab Tests	n	Mean	Range
Serum lipase (UI)	4	501 UI	[459–668 UI]
Blood glucose (mmol/L)	4	4.2	[0.81–7.59]
Hemoglobin (mg/dL)	4	9.92	[5.66–13.98]
C-reactive protein (mg/L)	1	238.41	—

Chronic Pancreatitis

Five (5) cases of chronic pancreatitis were recorded, accounting for 15.1% of pancreatic diseases. The average consultation delay was 3 months. Mean age was 47.7 ± 2.8 years (range: 38–56). There were 4 male and 1 female patients.

Abdominal ultrasound was performed in all patients, revealing pancreatic calcifications in every case, three cases of Wirsung duct dilatation, and one case of pseudocyst. A CT scan was done in one patient.

Treatment was primarily medical, including lifestyle changes, analgesics, and antibiotics. One patient underwent biliodigestive

bypass and another required laparotomy for pseudocyst removal. Three patients had favorable outcomes, and one patient died.

Table 4: Clinical and paraclinical characteristics of chronic pancreatitis.

Symptom	n	%
Abdominal pain	5	100%
Asthenia	3	60%
Weight loss	3	60%
Jaundice	1	20%
Diarrhea	1	20%
Habits	n	%
Alcohol	2	40%
High-fat diet	1	20%
Alcohol + tobacco + high-fat diet	1	20%
No particular habits	1	20%
General signs	n	%
WHO general status stage 2	5	100%
Fever	2	40%
Malnutrition	3	60%
Dehydration	2	40%
Anemia	2	40%
Imaging	n	%
Pancreatic calcifications	5	100%
Wirsung duct dilatation (US)	3	60%
Pseudocysts (US)	1	20%
Pancreatic calcifications (CT scan)	1	100%

Discussion

This study has several limitations due to its retrospective nature. These include:

- Poor maintenance of clinical records and missing data in patient files,
- The unavailability of certain paraclinical examinations, either due to financial constraints or the unavailability of resources within the hospital,
- The absence of pancreatic biopsies.

Despite these constraints, we obtained results that can be compared with existing literature.

Epidemiological Aspects

In our study, 33 cases of pancreatic diseases were recorded, yielding a hospital frequency of 0.33%. This is lower than the 1.06% reported by Ouango [9] in a hospital-based study conducted in Ouagadougou over a 10-year period from January 2001 to December 2010. This reflects the overall low frequency of this pathology in our country. However, the lower frequency observed in our setting compared to Ouagadougou could be due to the fact that the CHUYO is a national referral center that receives patients from all over the country. Furthermore, the lack of equipment in our hospital constitutes a limiting factor in diagnostic capabilities.

We observed a predominance of tumor-related pancreatic diseases (24/33 or 72.7%) over inflammatory diseases (9/33 or 27.2%). These findings contrast with those of other authors. Sarles et al. [10], in a multicenter study involving 19 predominantly Western countries, reported 96.1% of cases as pancreatitis and only 3.9%

as tumors. In Africa, Ibrahim [11] in Senegal found 48.18% for pancreatic tumors and 51.82% for pancreatitis; Nozais et al. [12] in Côte d'Ivoire reported 66.67% for pancreatitis and 33.33% for tumors.

The higher frequency of pancreatic tumors in Burkina Faso may be explained by the selection of more severe cases referred to hospitals, while milder cases such as acute pancreatitis may be managed at lower-level health centers. Furthermore, cases may be underreported, as abdominal pain is often self-managed through self-medication. Traditional medicine is also the first line of care for many. Primary health centers often lack laboratory facilities, which limits the diagnosis of acute pancreatitis, particularly since lipase testing is unavailable even when clinical suspicion exists.

Male patients were far more affected, with a sex ratio of 3.1. This has been similarly reported by several authors [8-10]. The male predominance could be attributed to greater exposure to risk factors such as smoking and alcohol consumption, which are well-established contributors to pancreatic disease in our setting [13].

Malignant Pancreatic Tumors

We diagnosed 23 cases of pancreatic cancer over a 10-year period, or an average of 2.2 cases per year. Our findings are consistent with those of Sodio [14] in Mali, Aguemou et al. [15] in Benin, and Ilboudo [16] and Ouango [9] in Burkina Faso, who reported hospital frequencies of 4 cases/year, 4.33 cases/year, and 1.8 cases/year, respectively. However, they are lower than the findings of Belemsigri [8], who reported 26 cases over 2 years (13 cases/year), which appears to be an outlier. Pancreatic tumors do not appear to be very common in sub-Saharan Africa.

In our study, the main clinical signs were an enlarged gallbladder (100%), abdominal mass (86.86%), scratch lesions (81.81%), hepatomegaly (72.72%), and ascites (63.63%). This suggests late-stage diagnosis, as also noted by several African studies [8,9,18-19].

Ultrasound confirmed the presence of a pancreatic mass in 44% of cases. In Benin, Kpossou et al. [18] found this in 67.3% of patients. In Burkina Faso, Belemsigri [8] and Ouango [9] reported 68.75% and 50%, respectively. CT scans were performed in only 13.12% of patients, helping to suspect pancreatic cancer. These figures are lower than those from Kpossou et al. [18] in Benin (98.4%) and Belemsigri [8] in Burkina Faso (30.8%). This could be attributed to the long-term unavailability of CT scanning in our region; our hospital only acquired a CT scanner in 2020, after the COVID-19 pandemic.

All patients received pain management. These findings align with Belemsigri [8] and Ouango [9], who reported 92% and 100% of patients, respectively, receiving analgesics. Antibiotics were administered in 28% of cases, comparable to Belemsigri's 26.9%. No patients received chemotherapy or radiotherapy, similar to the findings of Koura et al. [19]. In contrast, Kpossou et al. [18] in Benin reported that 13.9% of patients received chemotherapy. The

lack of chemotherapy in our study could be explained by the high cost of anti-cancer drugs, which must be borne entirely by patients, most of whom are impoverished. Additionally, anti-cancer drugs are often unavailable in health facilities, and radiotherapy centers and digestive oncology specialists are scarce.

We observed a mortality rate of 45.45% in our study, which is higher than that reported by Belemsigri [8] and Ouango [9], who found mortality rates of 30.8% and 27.78%, respectively. This high mortality may be due to the late diagnosis of pancreatic cancers, which are known for their high lethality.

Acute Pancreatitis

In this study, acute pancreatitis accounted for 12.12% (4/33) of pancreatic diseases or 0.04% of hospitalized patients. These findings are comparable to those of Belemsigri [8] (10.5%). Ouango [9] reported 7 cases over 10 years, or 0.2% of hospital admissions. Yonli [20] identified 30 cases over 6.5 years in Ouagadougou, corresponding to an incidence of 4.6 cases/year and 0.46% of hospitalizations. Sawadogo et al. [21] noted a frequency of 4.76%. All these results suggest that acute pancreatitis is either rare or underdiagnosed in our setting.

All patients diagnosed with acute pancreatitis in our study were male, consistent with most studies. In Burkina Faso, Yonli [20] found 73.3% male predominance. In contrast, in North Africa, female predominance is more common; in Morocco, El Khanboubi [22] reported 59% female patients. Our findings may be explained by alcohol use, an etiologic factor implicated in 30–40% of cases [23].

The mean age of onset was 37.7 years, which is lower than the 50 years reported by El Khanboubi [22] in Morocco, but higher than the 28.7 and 33 years reported by Belemsigri [8] and Ouango [9], respectively. In Burkina Faso, patients tend to be younger, likely due to a young population and the increased frequency of biliary lithiasis, a major cause of acute pancreatitis, with advancing age.

All patients in our study experienced favorable outcomes. This is notably higher than the favorable outcomes reported by Anderson et al. [24] in South Africa (9.9%), El Khanboubi [22] in Morocco (7.5%), Mutebi et al. [25] in Kenya (2.9%), and Yonli [20] in Burkina Faso (3.3%). Our favorable outcomes may be due to the fact that all cases involved mild forms of the disease.

Chronic Pancreatitis

Chronic pancreatitis represented 15.15% of pancreatic diseases or 0.05% of hospitalized patients. These results are lower than those reported by Lankisch et al. [26] in Germany and Sakanle [27] in Dakar, who found 24.5% and 72.41% of cases, respectively. Ouango et al. reported a hospital frequency of 0.26%. Despite its various etiologies, chronic pancreatitis seems rare in our context.

In our study, only one patient (25%) underwent a biliodigestive bypass. This is slightly higher than the 16.7% and 11.11% reported by Belemsigri [8] and Ouango [9], respectively. One death (25%)

was recorded in our study, compared to 33.33% reported by Ouango.

Conclusion

This study shows that pancreatic diseases are relatively rare in our context and are predominantly malignant tumors. These conditions primarily affect middle-aged adult males. Diagnosis was based on risk factors such as alcohol and tobacco use, functional symptoms (especially abdominal pain), and ultrasonographic findings. Medical management was the primary therapeutic approach used, mainly palliative care for patients with malignancies, as reflected in the high mortality rate.

These findings underscore the need for public awareness campaigns regarding the risk factors of pancreatic diseases and the establishment of appropriate technical facilities for their diagnosis and management.

References

1. Busnardo AC, DiDio LJ, Tidrick RT, et al. History of the pancreas. *The Am j surg*. 1983; 146: 53950.
2. Delhay M. Pancreatitis: Diagnosis and Management. *Brussels Med Rev*. 2016; 37: 294301.
3. Slimane NN, Khiali R, Ammari S, et al. Epidemiology of acute pancreatitis. *Algerian surgical year*. 2020; 51: 229.
1. SNFGE - French National Society of Gastroenterology - CISMef. 2014. Disponible sur: <https://www.cismef.org/page/snfge-societe-nationale-francaise-de-gastro-enterologie>
2. Zheng Z, Zheng R, He Y, et al. Risk Factors for Pancreatic Cancer in China: A Multicenter Case-Control Study. *J Epidemiol*. 2016; 26: 6470.
3. Ferlay J, Partensky C. Pancreatic cancer is a worrying global burden. *Metabolic Diseases*. 2019; 13: 28892.
4. Partyka O, Pajewska M, Kwaśniewska D, et al. Overview of Pancreatic Cancer Epidemiology in Europe and Recommendations for Screening in High-Risk Populations. *Cancers*. 2023; 15: 3634.
5. Belemsigri DFW. Pancreatic diseases: epidemiological, clinical, paraclinical and therapeutic aspects at the Sourô Sanou University Hospital of Bobo-Dioulasso: about 38 cases. University of Dioulasso. 2017; 98; 155.
6. Ouango J. Pancreatic diseases: Epidemiological, clinical, paraclinical and therapeutic aspects in the Hepato-Gastro-Enterology department at the Yalgado Ouedraogo University Hospital. University of Ouagadougou. 2011; 125.
7. Sarles H, Cros RC, Bidart JM. A Multicenter Inquiry into the Etiology of Pancreatic Diseases. *Digestion*. 1979; 19: 11025.
8. Ibrahim F. Pancreatic pathology in black people (about 120 cases observed in Dakar) Cheikh Anta University in Dakar. 1977; 128.
9. Nozas JP, Loubiere F, Bouvry M. Are pancreatic diseases so rare in Ivory Coast? *Rev Med Cote d'Ivoire*. 1973; 9: 57.
10. Maisonneuve P, Lowenfels AB. Risk factors for pancreatic cancer: a summary review of meta-analytical studies. *Int J Epidemiol*. 2015; 44: 18698.
11. Sanogo A. Pancreatic cancers: clinical epidemiological studies and management in the Internal Medicine department of Point G hospital. University of Bamako. 2006; 91.
12. Aguemon AR, Atchaide D, Bagnan O. Resuscitation problems during surgery for malignant tumors of the duodeno-pancreatic block. *Benin med*. 1997; 6: 357.
13. Ilboudo TSM. Tumors of the head of the pancreas in a hospital setting in Ouagadougou [Med. Thesis]. University of Ouagadougou. 2002; 49; 140.
14. Ntagirabiri R, Niyonkuru S, Karayuba R, et al. Pancreatic cancer in Burundi, experience of the Kamenge University Hospital. *J Afr Hepato Gastroenterol*. 2012; 6: 3124.
15. Kpoussou AR, Gbessi DG, Gnangnon FHR, et al. Pancreatic cancers at the National University Hospital of Cotonou: epidemiological, diagnostic, therapeutic and prognostic aspects. *Pan Afr Med J*. 2021; 39: 1-12.
16. Koura M, Napon-Zongo PD, Somé OR, et al. Pancreatic Cancer at the Sourô SANOU University Hospital Center in Bobo-Dioulasso (Burkina Faso): Epidemiological, Diagnostic and Therapeutic Aspects. *Health Sci Dis*. 2020; 21: 95-99.
17. Yonli YAP. Acute pancreatitis in the general and digestive surgery department of CHUYO. University of Ouagadougou. 2012; 164; 125.
18. Sawadogo A, Sermé AK, Ouattara ZD, et al. Pancreatic damage during HIV infection at the Sourou Sanou University Hospital in Bobo-Dioulasso. *Burkina med*. 2006; 9: 7.
19. EL khanboubi A. Acute biliary pancreatitis. MOHAMMED V University. 2009; 228; 103.
20. Buscail L. Acute pancreatitis in post'u emc-hge. Elsevier Masson. Paris. 2016; 1996.
21. Anderson F, Thomson SR, Clarke DL, et al. Acute pancreatitis: demographics, aetiological factors and outcomes in a regional hospital in South Africa. *S Afr J Surg*. 2008; 46: 836.
22. Mutebi M, Abdallah A, Saidi H. Acute pancreatitis at the Aga Khan University Hospital, Nairobi: a two-year audit. *Ann Afr Surg*. 2007; 1.
23. Lankisch PG, Assmus C, Maisonneuve P, et al. Epidemiology of pancreatic diseases. *Pancreatol*. 2002; 2: 46977.
24. Sankale M. Pancreatic pathology in black Africans excluding diabetes. In *Tropical Med*. 1984; 44: 25968.