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# OUTCOMES OF PANCREATIC DISEASES IN A TERTIARY CARE HOSPITAL

General Surgery

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## ABSTRACT

**Introduction:** There has been a meteoric rise in the fraction of patients who are presenting with the disorders of the pancreas, necessitating the need for increased awareness of the disease and treatment modalities of disorders of the pancreas, The appropriate modalities for diagnosis and the proper treatment protocols that have been utilized. **Materials and Methods:** This study was done on 40 out of 61 patients with various pancreatic diseases that were admitted and operated in the surgery department for one year(2023-2024). **Results:** There Is an increased rate of pancreatic surgeries during this period as compared to the previous years(2022-2023) as only 28 out of 46 were operated previously. There is also increased the incidence of pancreatic diseases as reflected in a total number of admissions, which increased from 46 during the period of (2022-2023) to 61 during the period of (2023-2024). This is due to the increased incidence of alcoholism, smoking, gall stone diseases reinforced by studies done by Kontis V et al1, Hirota et al. 2 **Conclusion:** Most cases of benign pancreatic disorders were identified between 3rd to 5th decades. Pancreatic malignancies in 5th and 6th decades. More cases of pancreatic malignancies are being identified in resectable stages.

## KEYWORDS

Pancreas, Pancreatitis, pseudocyst, Malignancy.

## INTRODUCTION

Treating the disorders of the pancreas is a very difficult proposition. There has been a meteoric rise in the fraction of patients who are presenting with the disorders of pancreas necessitating the need for increased awareness of the disease and treatment modalities of the pancreatic disorders. A paradigm shift from a guarded approach to aggressive management of pancreatic disorders has been made possible by the increased availability of advanced surgical equipment and pre and postoperative management in our institute. This study is focused on identifying the various causes of pancreatic disorders, the appropriate modalities for diagnosis, and proper treatment protocols that have been utilized. The main aim of study was to identify the demographics , epidemiology of various disorders of pancreas that we come across,to know the diseases which are most suitable for surgical intervention and when to intervene,To know which surgery is best suited for treatment of each condition of pancreas, To identify the complications following various surgeries of pancreas and steps that need to be taken to properly manage them.

## MATERIALS AND METHODS

This study was done on 40 out of 61 patients with pancreatic diseases that were operated in the surgery department for one year(2023-2024). Selection of cases based on all patients who attended the department of surgery with the source of pathology as the pancreas is included in this study. Written and informed consent was taken from all of them. Presenting symptoms were recorded. A detailed history is taken. A detailed general and systemic examination are done. Routine investigations are done for all cases. CECT Abdomen was done for all cases. Serum amylase and lipase did in cases of pancreatitis. MRCP is done in cases with obstructive jaundice. UGIE is done in selected cases.

- **Study Method:** Prospective Study
- **Study Area:** ASRAM Hospital
- **Study Period:** March2023–February 2024(12 MONTHS)
- **Data Collection:** 12months·
- **Study Population:** Patients presenting to ASRAM medical college hospital with pancreatic diseases.
- **Sample Size:** 40 patients

### Inclusion Criteria

All patients admitted with pancreatic pathology into surgical wards of ASRAM hospital and medical college. Age of more than 18 years.

### Exclusion Criteria

Age of less than 18 years, patients who are admitted but later absconded and left against medical advice.

### Statistical Analysis

MS Excel was used for data analysis. Data is presented using various tables, bar diagram whenever necessary.

This study was done on 40 out of 61 patients with pancreatic diseases that were operated in the surgery department for one year (2023-2024). There is an increased rate of pancreatic surgery during this period as compared to the previous year (2022-2023) as only 30 out of 46 were operated previously. There is also increased the incidence of pancreatic diseases as reflected in the total number of admissions, which increased from 46 during the period of (2022-2023) to 61 during the period of (2023-2024). This is due to the increased incidence of alcoholism, smoking, gall stone diseases reinforced by studies done by Kontis V et al1, Hirota et al. 2.

## DISCUSSION

Carcinoma pancreas heads the list with 15 cases (38%).This is because the primary treatment modality for Malignancy is surgery and also because more and more cases are detected in the resectable stage. (Wittel UA et al. 3).11 patients of chronic pancreatitis mainly with duct dilatation of greater than 8mm and calcification were operated, literature also supports the same (Mayerle J et al4). Those that present with pain and with atrophied gland were not operated (De-Madaria E et al. 5).

Similarly, 11 pseudocysts were operated. The selection criteria were increasing in size or failure to resolve if higher than 6cms, persistent pain or nausea irrespective of size, Cyst wall thickness >/=6mm (Marino KA et a6). Indications for drainage are the presence of symptoms, enlargement of Cyst, complications (infections, bleeding, rupture, and obstruction), and suspicion of Malignancy. Pitchumoni CS, Agarwal N7). Only three patients with infected necrosis in acute pancreatitis present in only 10-15% of patients and the majority of necrotizing pancreatitis can be managed without surgical intervention since it is sterile necrosis.

As can be expected, carcinoma pancreas has equal sex predilection. It has encountered chronic pancreatitis and pseudocyst predominantly in Males because of the increased consumption of alcohol in males.

### Age Incidence

The youngest patient we operated was a female of 18years with chronic pancreatitis (Tropical pancreatitis) and oldest was 69 years male with carcinoma head of the pancreas.

More than half (55%)of pancreatic diseases are present in the age group of 31-50 yrs, pseudocyst present in the early age group as 8 out of 11 presented between 21-40yrs. Carcinoma is a disease of later years. 09 out of 15 (60%) performed in above 50 yrs patients. Chronic pancreatitis present in between 31-50 years (8 out of 11=77%).

All patients underwent an ultrasound and CT scans (Lu DS et al8 Mertz HR Manikkavasar et al. 10). ERCP was done in 20 patients. All 11

patients of chronic pancreatitis and 10 with periampullary carcinoma underwent ERCP (WilcoxCM11). For carcinoma head (4) and body and tail (1) were operated with CT findings alone. One patient with groove pancreatitis was diagnosed by medical gastroenterology and transferred to us.

Endoscopic ultrasound was not done in any because of the unavailability of that equipment in our institute. It is a beneficial investigation which aids guided biopsy and helps in the delineation of the exact extension of the tumor (Kalra MK 12 Thomas Rosch 13). Similarly, FNAC (either pre or intraoperatively) was not performed (table 5). However, histopathology was carried out in all resected cases (15 of carcinoma pancreas).

**Site Incidence**

Contrary to literature periampullary carcinoma formed the bulk of malignant cases in our series (10 out of 15, i.e., 66%) where only 4(26%)were carcinoma head. This indicates a higher incidence of periampullary carcinoma in these parts of the county. However, studies with larger numbers are needed to establish this fact.

**Etiology Of Pseudocyst Of Pancreas**

Most of the pseudocysts are due to pancreatitis either acute (62.5%) or chronic (25%).Acute pancreatitis due to alcohol abuse seems to be the most common cause of pancreatitis in our study, which is the same corresponding in the literature (Nguyen BL et al. 14 Pitchmouni 7).

**Treatment Modality**

Cystogastrostomy was the preferred method in our series (10/11) because of familiarity, ease, and location of the cyst. Choice of the procedure is dependent on factors like the location of cyst and surgeon preference etc. Studies have been conducted showing evidence that laparoscopic cystojejunostomy is feasible and gives good results comparable to open methods (Sahoo MR et al. 15). Endoscopic cyst gastrostomies also possible and gives good results (Benjamin H et al1 6) .

Lateral pancreaticojejunostomy was done in 9 out of 11 patients of chronic pancreatitis. Lateral pancreaticojejunostomy was the procedure of choice in chronic pancreatitis whenever the duct is dilated and the presence of intraductal calculi as supported by literature (O'Neil SJ et al. 23). Distal pancreatectomy was done in two patients with the disease in body and tail. In cases where the pathology is restricted to the body and tail of distal pancreas, pancreatectomy is the procedure of choice (Lillemoe KD et al. 24).

Whipple's was done in 11 out of 15 patients with carcinoma pancreas, as most were situated in the periampullary region and head region. Two patients with carcinoma in body and tail were treated by distal pancreatectomy, and two cases were treated with a palliative triple bypass.

We advocate classical Whipple's procedure than PPPD(Pylorus Preserving Pnancreatico Duodenectomy) because although PPPD has slightly lesser incidence of DGE, but there is no overwhelming superiority of one procedure over the other (Fujii T et al., Leichtle SW et al. 17, Huttner FJ 18). Subtotal stomach preserving pancreaticoduodenectomy (SSPPD) was advocated, in which the pyloric ring and duodenum were removed and more than 90% of the stomach was preserved with better Perioperative and longterm outcomes (Matsumoto I et al. 19).

We routinely perform the dunking procedure for pancreaticojejunostomy with intermittent sutures. Even continuous sutures can be used, and studies are there showing their efficacy over intermittent sutures (T Katohet et al. 20). Duct to mucosa technique is the preferred technique and is associated with a lesser incidence of POPF (Postoperative pancreatic fistula) and better outcome when compared to dunking procedure in literature (Bai X, Zhangq et al. 21) but we still perform dunking procedure in our institute because of familiarity of surgeons with the procedure and better outcomes with that procedure in our institute. Recent studies have evolved, which have stated that dunking procedure also had good results contrary to the popular belief that duct to mucosa anastomosis is superior (S de Geu et al. 22)

**Complications**

Delayed gastric emptying (DGE) was seen in (4 out of 11, 36%).Whipples procedures. This is slightly higher when compared to current literature (20%) (Hackert T et al., Eisenberg JD et al26, 27). Various studies have shown that the incidence of DGE varies from 10-40%, which is influenced by various factors (A Noorani 28). In our study, a slightly higher incidence of DGE can be attributed to the method of surgery (standard whipples procedure). PPPD is related to a lower incidence of DGE. Antecolic reconstruction decreases DGE incidence after SSPPD. (HiroshiKurahara et al. 29).

The next common complication was wound infection in 6 patients (15%)This is comparable with other major surgeries performed in our institute & this is also comparable to various studies in literature 10-15%Alp E et a30.

One post-Whipple's operation patient had a recurrence (lymph nodal) after two years and was given palliative chemoradiation. We didn't encounter any other complications like an intraabdominal abscess or bile leak in our series. Two patients of Whipple's died (18%).Cause of death being myocardial ischemia during the postoperative period in two patients. Although this mortality rate is high when compared to literature deaths occurred in two cases who are aged above 65 years with significant cardiovascular risk factors corresponding to specific subgroups of patients with a high risk of morbidity and mortality (EM Gleeson et al. 31).

One case of pancreatic trauma were managed conservatively. Studies have shown that for Pancreatic injury grades 1 and 2, Conservative Management is the most effective as long as there is no involvement of the main pancreatic duct. This strategy is effective since morbidity is less than 20%and mortality is relatively low Sharpe 32. Majority of the conservatively managed cases in this study are pseudocyst of pancreas. The previously held notions that the Cyst needs to be-be 6cm in diameter and 6mm in thickness are no longer considered essential and latest guidelines say that treatment should be based on the symptomatology of patient rather than on objective evidence on imaging (Pitchumoni CS, Agarwal N 7).

In making treatment decisions, it is important to recall that 50% of pancreatic pseudocysts do not require any intervention and can be successfully managed by a wait and watch approach (A K Khanna et al. 33). One patient with pancreatic divisum have been treated conservatively. It includes a low-fat diet, analgesics, anticholinergics, and if necessary, pancreatic enzyme supplements (Evan I Fogel).

One case of pancreatic necrosis have been treated conservatively. By international guidelines, patients with sterile necrosis can be successfully managed conservatively (without any form of radiological, endoscopic, or surgical intervention) (Banks 34). An intervention for sterile peripancreatic collections with fluid and necrosis accommodates the risk of introducing infection of necrosis (55-59%)(Wales).

## CONCLUSION

More cases of pancreatic malignancies are being identified in resectable stages. Males are twice as commonly affected than females owing to lifestyle changes like increasing alcohol consumption and smoking. Most cases of benign pancreatic disorders were identified between 3rd to 5th decades. Pancreatic malignancies were commonly found in 5th and 6th decades. CT scan with multidetector taken in the portal venous phase is the gold standard for evaluating pancreas.

Benign disorders of pancreas like pseudocyst are managed by cystogastrostomy and chronic pancreatitis by lateral pancreatico-jejunostomy with head coring. Pancreatic malignancies are best treated with the time tested classical whipples pancreatico-duodenectomy, and the dunking type of pancreatico-jejunostomy seems to be performing fine in our setup, and the results are promising, the reason being increasing availability of surgical instruments like Ligasure, harmonic scalpels, stapling devices which are significantly reducing the operating time and associated morbidity. The operating times, postoperative management and duration of stay, the incidence of complications seem to be getting better, which brings us to the fact that pancreas is no more a dreaded area for the general surgeon. Mortality of 5% is comparable to high volume centers. The increasing availability of therapeutic endoscopy can be utilized both for the treatment of benign conditions like pseudocyst and diagnosis of malignancies. Surgery remains the best and most effective intervention for Pancreatic disorders despite high complication rates, which are reducing.

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