

## CLINICAL STUDY ON PANCREATIC CANCER IN GOVERNMENT GENERAL HOSPITAL, GUNTUR, AP, INDIA

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### HOW TO CITE THIS ARTICLE:

Ch. Kalyan Kumar, Y. Rajya Lakshmi, Chukka Kereena. "Clinical Study on Pancreatic Cancer in Government General Hospital, Guntur, A. P, India". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 13, March 30, 2015; Page: 1955-1961.

**ABSTRACT:** Pancreatic cancer has a lower incidence than many other types of cancer, but is the fourth most common cause of death from cancer, among men and women, being responsible for 6% of all cancer-related deaths. The global annual incidence rate for pancreas cancer is about 8/100,000 persons. Pancreatic cancer disease is notoriously difficult to diagnose in its early stages. Study was carried out in the Department of General Surgery, Government General Hospital, Guntur from October 2010 to 2012, in which 16 cases with a diagnosis of carcinoma pancreas. They were investigated with routine blood investigations. They were treated accordingly with Pylorus preserving pancreaticoduodenectomy (PPPD) or palliative bypass or with non-operative palliative measures. Carcinoma pancreas is an aggressive disease with male preponderance with peak incidence in 5th and 6th decade. Important risk factors are Smoking and alcohol consumption. Nearly 75% of the cases presented in the late stage of the disease. Resection of the tumour had better survival. The limitations of our study are small number of patients and short follow-up.

**KEYWORDS:** Pancreatic Cancer, Surgery, Risk assessment, Complications.

**INTRODUCTION:** Pancreatic cancer arises when cells in the pancreas, a glandular organ behind the stomach, begin to multiply out of control and form a mass. These cancer cells have the ability to invade other parts of the body (National Cancer Institute. 2014).<sup>1</sup> There are a number of types of pancreatic cancer. The most common, pancreatic adenocarcinoma, accounts for about 85% of cases, and the term "pancreatic cancer" is sometimes used to refer only to that type. Pancreatic cancer has a lower incidence than many other types of cancer, but is the fourth most common cause of death from cancer, among men and women, being responsible for 6% of all cancer-related deaths. The global annual incidence rate for pancreas cancer is about 8/100,000 persons (Raimondi, Maisonneuve, et al. 2009).<sup>2</sup>

Pancreatic cancer disease is notoriously difficult to diagnose in its early stages. At the time of diagnosis, 52% of all patients have distant disease and 26% have regional spread. The relative 1-year survival is only 24% and the overall 5-year survival rate for pancreatic cancer disease is less than 5%. The incidence of pancreatic cancer in India has risen slowly over the years. In 2008, there were an estimated 279,000 new diagnoses of pancreatic cancer worldwide, accounting for 2.2% of all new cases of cancer (World Wide cancer statistics. 2012).<sup>3</sup> Study is aimed to study the incidence, risk factors, clinical profile, management and post-operative complications of carcinoma pancreas.

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**METHODOLOGY:** Study was carried out from October 2010 to 2012, in which 16 cases with a diagnosis of carcinoma pancreas. They were examined and investigated with routine blood investigations. They were treated accordingly with Pylorus preserving pancreaticoduodenectomy (PPPD) or palliative bypass or with non-operative palliative measures.

**RESULTS & DISCUSSION:** Table 1 shows the general information regarding gender, age, histopathology and stage of the disease, in patients with pancreatic cancer. There is a male preponderance in the present study with 9(56.3%) male patients and 7(43.7%) females. In all groups, men have higher incidence rates than women. The age was distributed between 40 to 60 years and 61 & above years. In this study, 15(93.7%) cases were found to have adenocarcinoma and mucinous adenocarcinoma in 1(6.3%) case. Adenocarcinoma is the most frequent type of pancreatic cancer; slower-growing endocrine tumors account for only a small fraction of the total burden of disease (World Wide cancer statistics. 2012). 4(25%) cases were in stage IIB, 7(43.7%) were in III stage and 5(31.3%) cases were in IV stage respectively. Age, gender, and race; the risk of developing pancreatic cancer increases with age. Most cases occur after age 65, (World Cancer Report 2014. World Health Organisation. 2014.<sup>4</sup> Chapter 5.7. ISBN 92-832-0429-8). While cases before age 40 are uncommon.

| Variables            |                         | Number with Percentage |
|----------------------|-------------------------|------------------------|
| Gender               | Female                  | 7 (43.7)               |
|                      | Male                    | 9 (56.3)               |
| Age Group            | 40-60                   | 8 (50)                 |
|                      | 61- & above             | 8 (50)                 |
| Histopathology       | Adenocarcinoma          | 15 (93.7)              |
|                      | Mucinous adenocarcinoma | 1 (6.3)                |
| Stage of the Disease | Stage I & II A          | 0                      |
|                      | II B                    | 4 (25)                 |
|                      | III                     | 7 (43.7)               |
|                      | IV                      | 5 (31.3%)              |

Table 1: General Information of Cases with Pancreatic Cancer

Table 2 shows the signs and symptoms of pancreatic cancer cases. On examination 7(43.7%) had hepatomegaly, 5(31.3%) had palpable gall bladder and 4(25%) had palpable mass other than liver and gall bladder. 11(68.7%) patients presented with epigastric pain, 15(93.7%) cases presented with jaundice, 14(87.5%) cases presented with pain abdomen and 3(18.7%) complained of mass per abdomen.

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Most of the Pancreatic Cancer cases are diagnosed in the advanced late stage because many patients do not experience any major symptoms in the beginning. It is also known as one of the most dangerous cancers and most difficult to treat. The most common symptoms of Pancreatic Cancer are Stomach or back pain, Jaundice or Yellow skin, Weight Loss, Change in color of Urine and Stools, Loss of appetite, Indigestion, Change in blood sugar levels, Diarrhea and Weakness. The most common causes of Pancreatic Cancer are Smoking and Alcohol intake, Family history and Genetic factors, Obesity or Excess body weight, Infections (Helicobacter Pylori), and Eating less vegetables and fruits and more red meat sugar for many years.

|          |                           | <b>Present</b> | <b>Absent</b> |
|----------|---------------------------|----------------|---------------|
| Signs    | Hepatomegaly              | 7 (43.7)       | 9 (56.3%)     |
|          | Palpable gall bladder     | 5 (31.3)       | 11 (68.7)     |
|          | Palpable mass             | 4 (25)         | 12 (75)       |
| Symptoms | Epigastric pain           | 11 (68.7)      | 5 (31.3)      |
|          | Jaundice                  | 15 (93.7)      | 1 (6.3)       |
|          | Loss of weight & Appetite | 14 (87.5)      | 2 (12.5)      |
|          | Mass per abdomen          | 3 (18.7)       | 13 (81.3)     |

**Table 2: Signs and Symptoms of Pancreatic Cancer Cases.**

Table 3 shows the Risk factor assessment of cases with pancreatic cancer. In this study, the risk factors for carcinoma pancreas were assessed. They are smoking, alcohol consumption, DM, and pancreatitis which were 10(62.5%), 8(50%), 5(31.3), 3(18.7%) respectively. Smoking and alcohol combined is seen in 7(43.7%) cases respectively.

It is difficult to implicate alcohol as an independent risk factor for pancreatic cancer because of the close association between alcohol and smoking - a proven risk factor for pancreatic cancer. If alcohol affects pathogenesis of pancreatitis, it could promote the effects of other risk factors, such as smoking. Recent studies concluded that heavy drinkers might have an increased risk of pancreatic cancer. Gapstur et al. in a study of non-smokers, observed an increased risk of pancreatic cancer only among persons who consumed more than 3 drinks per day (Gapstur SM, Jacobs EJ, et al. 2011).<sup>4</sup> Examining 10 case-control studies, Lucenteforte et al. found an increased risk of pancreatic cancer among persons who consumed more than 9 drinks per day (Lucenteforte, La Vecchia, et al. 2012).<sup>5</sup> Risk factors for pancreatic cancer include tobacco smoking, obesity, diabetes, and certain rare genetic conditions (Ryan DP, Hong TS et al. 2014).<sup>6</sup> About 25% of cases are linked to smoking, (Wolfgang CL, Herman JM et al. 2013)<sup>7</sup> and 5–10% are linked to inherited genes (Ryan DP, Hong TS et al. 2014).<sup>6</sup> Diabetes mellitus is a risk factor for pancreatic cancer and (as noted in the Signs and symptoms section) new-onset diabetes may also be an early sign of the disease. People who have been diagnosed with Type 2 diabetes for longer than ten years may have a 50% increased risk, as compared with non-

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diabetics (Wolfgang CL, Herman JM et al. 2013).<sup>7</sup>

|              |                   | <b>Yes</b> | <b>No</b> |
|--------------|-------------------|------------|-----------|
| Risk factors | smoking           | 10 (62.5)  | 6 (37.5)  |
|              | Alcohol           | 8 (50)     | 8 (50)    |
|              | H/O Pancreatitis  | 3 (18.7)   | 13 (81.3) |
|              | Diabetes mellitus | 5 (31.3)   | 11 (68.7) |

**Table 3: Risk factor assessment of Pancreatic cancer cases**

Table 4 shows type of treatment received in patients with pancreatic cancer. In this study 4(25%) cases in stage IIB underwent PPPD and 1(63%) cases in stage III underwent distal pancreatectomy. 5(31.3%) cases in stage III disease and 2(12.5%) cases in stage IV disease had underwent palliative triple bypass surgery. 4 (25%) cases received adjuvant chemotherapy following curative surgery. 11(68.7%) cases received palliative chemotherapy with and without palliative bypass. Pancreatic cancer can be treated with surgery, radiotherapy, chemotherapy, palliative care, or a combination of these. Treatment options are partly based on the cancer stage. Surgery is the only treatment that can cure the disease; it may also be done to try to improve quality of life without the potential for cure. (National Cancer Institute. 2014).<sup>8</sup> Pain management and medications to improve digestion are sometimes needed (Bond-Smith G, Banga N, 2012).<sup>9</sup> Early palliative care is recommended even for those receiving treatment that aims for a cure (Shahroki A, Saif MW. 2013;<sup>10</sup> Bardou M, Le Ray I. 2013).<sup>11</sup> All patients with pancreatic cancer should be offered chemoradiation therapy, in hopes of down staging the tumor for possible resection and achieving higher survival (Kapoor R, Khosla D, et al. 2014).<sup>12</sup>

| <b>Treatment</b>                            |                       | <b>No. of cases</b> |
|---|-----------------------|---------------------|
| Surgery + Adjuvant chemotherapy             | PPPD                  | 4                   |
|   | Distal pancreatectomy | 1                   |
| Palliative bypass & palliative chemotherapy |                       | 7                   |
| Palliative chemotherapy alone               |                       | 4                   |

**Table 4: Type of treatment in patients with pancreatic cancer**

Table 5 shows the complications during post-operative period. During the postoperative period, of the 5 cases who underwent curative surgery, 3(25%) cases had bleeding, 4(80%) cases had pain and 1(20%) had pancreatic and biliary leak died during early postoperative period. 2(40%) cases had wound infection and 1(20%) cases had hematemesis and ascites. Uncontrolled diabetes was reported 1(20%) case. 2(40%) cases died during late followup period due to recurrence. In the group who underwent palliative bypass, 5(71.4%) cases complained

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pain and 2(28.6%) cases complained of hematemesis. Early postoperative death was reported in 1(14.3%) due to leak. Ascites was reported in 2(28.6%) cases. Late mortality is seen in 2(28.6%).

| <b>Complications</b>          | <b>No. of cases (n-12)</b> | <b>Curative resection (n-5)</b> | <b>Palliative bypass (n-7)</b> |
|-------------------------------|----------------------------|---------------------------------|--------------------------------|
| Pain                          | 9 (75)                     | 4 (80)                          | 5 (71.4)                       |
| Bleeding                      | 3 (25)                     | 3 (60)                          | 0                              |
| Leak                          | 2 (16.7)                   | 1 (20)                          | 1 (14.3)                       |
| Wound infection               | 2 (16.7)                   | 2 (40)                          | 0                              |
| Ascites                       | 3 (25)                     | 1 (20)                          | 2 (28.6)                       |
| Hematemesis                   | 3 (25)                     | 1 (20)                          | 2 (28.6)                       |
| Early postoperative mortality | 2 (16.7)                   | 1 (20)                          | 1 (14.3)                       |
| uncontrolled diabetes         | 1 (8.3)                    | 1 (20)                          | 0                              |
| Recurrence                    | 2 (16.7)                   | 2 (40)                          | 0                              |
| Late mortality                | 4 (33.3)                   | 2 (40)                          | 2 (28.6)                       |

Table 5: Complications during post-operative period:

Table 6 shows the follow up period of cases with pancreatic cancer. In this study, of the 12(75%) cases who underwent surgery, 2(12.5%) cases died during the early postoperative period. Of the 10(62.5%) cases who came for follow up, 4(25%) cases died during the late follow up period. 6(37.5%) cases had <5 months, 1(6.3%) case had 5-10 months follow up, 2(12.5%) had 10-15 months of follow up and 1(6.3%) case had follow up for >15 months.

| <b>Follow up period (months)</b> | <b>No. of Cases with Percentage</b> |
|----------------------------------|-------------------------------------|
| >5                               | 6 (37.5)                            |
| 5-10                             | 1 (6.3)                             |
| 10-15                            | 2 (12.5)                            |
| <15                              | 1 (6.3)                             |
| Total                            | 10 (62.5)                           |

Table 6: Follow up period

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Palliative care is focused on helping a person at any stage of illness and ideally started when a person is first diagnosed. People offer treatment for the cancer and treatment to ease side effects at the same time. In fact, patients who receive both often have less severe symptoms, better quality of life, and report they are more satisfied with treatment. Palliative treatments vary widely and often include medication, nutritional changes, relaxation techniques, and other therapies.

**CONCLUSION:** Carcinoma pancreas is an aggressive disease with male preponderance with peak incidence in 5th and 6th decade. Important risk factors are Smoking and alcohol consumption. Nearly 75% of the cases presented in the late stage of the disease. Resection of the tumour had better survival. The limitations of our study are small number of patients and short follow-up.

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Date of Submission: 17/03/2015.  
Date of Peer Review: 18/03/2015.  
Date of Acceptance: 20/03/2015.  
Date of Publishing: 27/03/2015.