

## Original Research Article

## Clinical Profile of Periapillary Carcinoma: Experience in a Tertiary Care Centre

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**Abstract**

**Background:** Peri-ampullary carcinoma arises from the ampulla of Vater or 1 cm around it which includes distal common bile duct (CBD), ampulla, duodenum and pancreatic head. **Objective:** Our aim is to analyze peri-ampullary carcinoma and its clinical profile, site of origin of tumor as well as the role of imaging in this present study. **Material & Methods:** The study had been conducted in the Department of Surgical Gastroenterology of a tertiary care center from June 2009 to May 2019 incorporating 50 patients proved to have peri-ampullary carcinoma. **Results:** In this study, males were predominantly affected (68%) with highest occurrence (40%) in the age group of 51-60 years. Jaundice becoming the commonest clinical presentation, head of the pancreas (HOP) was the commonest (36%) site of origin of the tumor. **Conclusion:** Most common site of origin of neoplasm from the head of pancreas was seen in 36% of patients followed by ampulla in 34% of patients. **Keywords:** Peri-ampullary Carcinoma, Head of the Pancreas (HOP), Ampulla of Vater, Clinical profile

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**Introduction**

Periapillary cancer is a heterogenous group of malignant disorder arising from the ampulla of Vater or within an area of 1 cm around it invading either of the structures like distal end of common bile duct (CBD), ampulla of Vater, duodenum and pancreatic head [1]. These conditions are grouped together not only for their anatomical proximity but for their common mode of clinical presentations as well as similar way of operative treatment [2-3]. Overall disease survival being one & half to two years, duodenal carcinoma bears the best prognosis. Our aim is to analyze peri-ampullary carcinoma and its clinical profile, site of origin as well as the role of imaging.

**Material & Methods**

This study was conducted in the department of Surgical Gastroenterology of a tertiary care hospital in Odisha, India from June 2009 to May 2019 to analyze clinical profile of Peri-ampullary Carcinoma. Total number of 50 cases had been enrolled in this study. Patient included in this study were radiologically &/or histologically proven cases of carcinoma arising from the ampulla of Vater or within 1 cm around it who were negative for HBsAg, HCV and HIV. We have also included patients of Peri-ampullary carcinoma who had undergone temporary endoscopic biliary stenting for hyper-bilirubinaemia. All cases included in this study had

been subjected for (i) Upper gastro-intestinal endoscopy with endoscopic biopsy for histo-pathological examination, (ii) abdominal ultrasound, (iii) Contrast enhanced computerized tomography (CECT) of abdomen, (iv) Liver function test (LFT) in addition to other laboratory investigations [4].

**Results**

Out of 50 patients in this series 34 patients (68%) were male and 16 patients (32%) were female. Highest incidence (40%) was seen in the age group between 51 years to 60 years, youngest patient was of 32 years and oldest being 70 years of age in our study. Out of all symptomatology of patients in this study, jaundice was seen in all patients, pruritus in 24 patients (48%), clay colored stools in 11 patients (36%), fever in 10 patients (26%), vomiting in 6 patients (12%) and bleeding in 1 patient (2%). Hyperbilirubinaemia, on laboratory investigation, was detected in all patients. Normal range of total bilirubin from 0.2 mg/dl to 0.8 mg/dl had been accepted for this study. On pre-operative imaging, mass was detected in 28 patients (56%) and dilated CBD in 15 patients (30%). Primary site of origin of neoplasm from the head of pancreas was seen in 18 patients (36%), from ampulla in 17 patients (34%), from distal CBD in 11 patients (22%) and from duodenum in 4 patients (8%). (Table No: 1)

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Table 1: Clinical profile of total number of patients included in this study.

| SL | Age | Sex | Site | Presentation |          |             |       |          |          |             |                 |         | Radiology Findings |              |
|----|-----|-----|------|--------------|----------|-------------|-------|----------|----------|-------------|-----------------|---------|--------------------|--------------|
|    |     |     |      | Jaundice     | Pruritus | Clay Stools | Fever | Vomiting | Bleeding | Weight Loss | Total Bilirubin | Stented | Mass               | CBD Dilation |
| 1  | 52  | M   | A    | Yes          | Yes      | No          | No    | No       | No       | Yes         | 18.5            | Yes     |                    |              |
| 2  | 55  | M   | A    | Yes          | No       | No          | No    | No       | No       | No          | 3.7             | No      |                    |              |
| 3  | 56  | M   | A    | No           | No       | No          | Yes   | No       | No       | Yes         | 15.9            | Yes     |                    |              |
| 4  | 42  | M   | HOP  | Yes          | No       | No          | No    | Yes      | No       | Yes         | 5.7             | No      |                    |              |
| 5  | 47  | M   | HOP  | Yes          | Yes      | Yes         | Yes   | Yes      | No       | Yes         | 8.7             | No      |                    |              |
| 6  | 45  | F   | HOP  | Yes          | Yes      | Yes         | Yes   | Yes      | No       | No          | 2.5             | No      | Yes                |              |
| 7  | 52  | F   | DC   | Yes          | No       | No          | No    | Yes      | No       | Yes         | 8.3             | No      |                    |              |
| 8  | 63  | M   | DC   | Yes          | Yes      | No          | Yes   | No       | No       | No          | 3.5             | No      |                    |              |
| 9  | 35  | M   | HOP  | No           | Yes      | Yes         | No    | No       | No       | No          | 9.6             | No      | Yes                |              |
| 10 | 46  | F   | HOP  | No           | No       | No          | No    | No       | No       | No          | 5.9             | No      |                    |              |
| 11 | 58  | M   | HOP  | Yes          | Yes      | Yes         | No    | No       | No       | No          | 5.8             | No      | Yes                |              |
| 12 | 70  | F   | DC   | Yes          | Yes      | No          | No    | No       | No       | No          | 21.4            | Yes     | Yes                |              |
| 13 | 56  | M   | HOP  | Yes          | Yes      | Yes         | No    | No       | No       | No          | 8.0             | No      | Yes                |              |
| 14 | 70  | M   | A    | Yes          | Yes      | No          | No    | No       | No       | No          | 8.5             | No      | Yes                |              |
| 15 | 41  | F   | HOP  | No           | Yes      | No          | Yes   | No       | No       | No          | 4.2             | No      | Yes                |              |
| 16 | 37  | M   | DC   | Yes          | Yes      | No          | No    | No       | No       | No          | 15.9            | Yes     |                    |              |
| 17 | 45  | F   | HOP  | Yes          | Yes      | Yes         | No    | No       | No       | No          | 4.7             | No      | Yes                |              |
| 18 | 47  | F   | DC   | Yes          | No       | No          | Yes   | No       | No       | No          | 16.4            | Yes     |                    |              |
| 19 | 60  | M   | D    | No           | No       | No          | No    | Yes      | No       | Yes         | 1.8             | No      | Yes                |              |
| 20 | 55  | F   | DC   | No           | No       | No          | No    | No       | No       | No          | 0.8             | No      |                    |              |
| 21 | 58  | M   | HOP  | No           | No       | No          | No    | No       | No       | No          | 1.7             | No      | Yes                |              |
| 22 | 59  | M   | A    | Yes          | Yes      | No          | No    | No       | No       | No          | 1.5             | No      | Yes                | 8mm          |
| 23 | 58  | F   | A    | No           | Yes      | No          | No    | No       | No       | No          | 15.7            | Yes     |                    |              |
| 24 | 42  | M   | DC   | Yes          | Yes      | Yes         | No    | No       | No       | No          | 6.8             | No      | Yes                | 1cm          |
| 25 | 48  | M   | D    | Yes          | Yes      | Yes         | Yes   | No       | No       | No          | 24.3            | Yes     |                    | 1.5 cm       |
| 26 | 56  | M   | DC   | Yes          | No       | No          | No    | No       | No       | No          | 10.6            | No      |                    | 1.5cm        |
| 27 | 64  | F   | DC   | Yes          | No       | No          | No    | No       | No       | No          | 3.1             | No      |                    | 1.5 cm       |
| 28 | 60  | M   | A    | Yes          | Yes      | No          | No    | No       | No       | Yes         | 16.8            | Yes     |                    | 1.0 cm       |
| 29 | 55  | M   | HOP  | No           | No       | No          | Yes   | No       | No       | No          | 2.3             | No      | Yes                |              |
| 30 | 47  | M   | A    | Yes          | Yes      | No          | No    | No       | No       | No          | 6.6             | No      | Yes                |              |
| 31 | 42  | F   | HOP  | Yes          | No       | No          | Yes   | Yes      | No       | No          | 2.5             | No      | Yes                | 1.5 cm       |
| 32 | 63  | M   | HOP  | No           | No       | No          | No    | No       | No       | No          | 1.1             | No      | Yes                | 2.5 cm       |
| 33 | 48  | F   | HOP  | Yes          | Yes      | No          | No    | No       | No       | Yes         | 15.4            | Yes     | Yes                |              |
| 34 | 32  | M   | A    | Yes          | No       | Yes         | Yes   | No       | No       | Yes         | 6.9             | No      |                    |              |
| 35 | 55  | M   | HOP  | Yes          | No       | Yes         | Yes   | No       | No       | Yes         |                 | No      | Yes                |              |
| 36 | 37  | M   | A    | Yes          | No       | No          | No    | No       | No       | No          | 15.7            | Yes     | Yes                |              |
| 37 | 32  | M   | A    | Yes          | Yes      | Yes         | No    | No       | No       | No          | 17.2            | Yes     |                    | 1 cm         |
| 38 | 50  | M   | DC   | Yes          | No       | No          | Yes   | No       | No       | Yes         | 22.2            | Yes     | Yes                |              |
| 39 | 48  | M   | D    | No           | No       | No          | No    | No       | No       | Yes         | 0.6             | No      |                    |              |
| 40 | 57  | M   | A    | Yes          | No       | No          | No    | No       | No       | Yes         | 3.7             | No      | Yes                | 1 cm         |
| 41 | 52  | M   | HOP  | Yes          | Yes      | No          | No    | No       | No       | Yes         | 15.4            | Yes     |                    |              |
| 42 | 65  | F   | HOP  | No           | No       | No          | No    | No       | No       | No          | 1.2             | No      | Yes                | 12mm         |
| 43 | 60  | M   | A    | Yes          | Yes      | No          | No    | No       | On       | Yes         | 12.3            | No      | Yes                |              |
| 44 | 43  | M   | A    | Yes          | Yes      | No          | Yes   | No       | No       | Yes         | 24.9            | Yes     |                    |              |
| 45 | 60  | M   | A    | Yes          | No       | No          | No    | No       | Yes      | Yes         | 2.6             | No      | Yes                | 1.5 cm       |
| 46 | 60  | M   | D    | No           | No       | No          | No    | No       | No       | No          | 2.7             | No      | Yes                | 1.0cm        |
| 47 | 40  | F   | A    | Yes          | No       | No          | No    | No       | No       | No          | 11.0            | No      | Yes                | 1.5 cm       |
| 48 | 45  | F   | A    | Yes          | Yes      | No          | No    | No       | No       | Yes         | 6.6             | No      |                    | 2.0 cm       |
| 49 | 68  | F   | HOP  | Yes          | No       | No          | No    | No       | No       | No          | 17.7            | Yes     | Yes                |              |
| 50 | 35  | M   | DC   | No           | No       | No          | No    | No       | No       | No          | 10.3            | No      | Yes                |              |

### Discussion

Periampullary carcinoma is a clinical condition often encountered by gastroenterologist and surgeon. There is limited data regarding clinical profile and endoscopic management of patients with periampullary tumour.[5] Periampullary carcinoma are found predominantly in the older age groups. According to the age-specific rates, the incidence of cancers of the ampulla began to increase after age 30, but increased more rapidly after age 50 in both men and

women.[6] In this study, males were predominantly affected (68%) than females with highest incidence (40%) in the age group between 51 years to 60 years which is comparable to other studies [7-9]. But the incidence was only 7% between 61 years and 70 years which is contrary to the finding that the incidence increases with age and majority of patients present within or beyond their sixth decade of life.[10-11] Out of several clinical presentations, jaundice was seen among highest number of the patients.

Even after stenting to reduce the level of hyper-bilirubinaemia with the aim of improving overall outcome of surgery, there was still persistence of hyper-bilirubinaemia in this study. This might be due to partial blockage of stent or due to dysfunction of hepatocytes in response to prolonged hyper-bilirubinaemia.[12-14] Besides jaundice and pruritus (48%), weight loss was an important feature seen in 36 % of cases which may be related to reduced appetite as well as to the direct effect of cancer itself. Detection of mass on radiologic imaging was seen in 56% of cases which proves the importance of imaging like USG and CECT of abdomen in Peri-ampullary carcinoma. The most common site of origin of carcinoma was from the head of pancreas (36%) followed by ampulla of Vater (34%) in this study which is in agreement with studies by Malla et al[14] and Pathy et al[15].

#### Conclusion

From this study, it is concluded that peri-ampullary carcinoma is more common among males between 41 years to 61 years of age. Jaundice being the commonest presenting feature, the most common site of origin of neoplasm is the head of pancreas (HOP) followed by ampulla. Radiological imaging plays an important role in detection and assessment of the tumor. As the number of patients are less in the present study, it requires more number of patients for further clarification, rectification and refinement.

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