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Research Article

Clinical Profile, Treatment and Outcomes of Patients with Pancreatic and Periampullary Carcinoma from a Tertiary Cancer Centre: A Retrospective Study

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Abstract

This study retrospectively analysed the clinical profile, treatment approaches, and outcomes of patients diagnosed with pancreatic and periampullary carcinomas at a tertiary cancer centre. The patient demographics showed a predominance of older adults and males. Common presenting symptoms being abdominal pain and yellowish discoloration of eyes, with a significant proportion reporting weight loss. Elevated CA 19-9 levels were observed, indicating advanced disease. The TNM staging showed a high incidence of late-stage disease at diagnosis. Various treatment modalities were employed, reflecting the complexity and personalised nature of the disease management. The analysis of survival outcomes, based on the Kaplan-Meier method, revealed significant disparities, underlining the importance of age as a prognostic factor. The study findings underscore the necessity for a comprehensive, multidisciplinary, and personalised approach to managing pancreatic and periampullary carcinomas. They provide a foundation for future research to refine detection strategies and treatment protocols and enhance patient outcomes.

Keywords: Pancreatic Carcinoma; Periampullary Carcinoma; Treatment Modalities; Disease Outcomes; Prognostic Factors

Introduction

This study retrospectively analysed the clinical profile, treatment approaches, and outcomes of patients diagnosed with pancreatic and periampullary carcinomas at a tertiary cancer centre. The patient demographics showed a predominance of older adults and males. Common presenting symptoms being abdominal pain and yellowish discoloration of eyes, with a significant proportion reporting weight loss. Elevated CA 19-9 levels were observed, indicating advanced disease. The TNM staging showed a high incidence of late-stage disease at diagnosis. Various treatment modalities were employed, reflecting the complexity and personalised nature of the disease management. The analysis of survival outcomes, based on the Kaplan-Meier method, revealed significant disparities, underlining the importance of age as a prognostic factor. The

study findings underscore the necessity for a comprehensive, multidisciplinary, and personalised approach to managing pancreatic and periampullary carcinomas. They provide a foundation for future research to refine detection strategies and treatment protocols and enhance patient outcomes.

Pancreatic and periampullary carcinomas, aggressive forms of cancer, frequently present at advanced stages, typically resulting in poor prognosis. Such cancers are characterised by their diverse clinical presentation, management strategies, and outcomes, which many factors may influence. Understanding these factors is crucial in refining diagnostic procedures, treatment protocols and improving patient outcomes [1]. This retrospective study as aimed to examine these influencing factors in-depth, evaluating their impact on the clinical scenario of pancreatic and periampullary carcinomas within a tertiary cancer centre setting. The study objective was to analyse a large cohort of patients diagnosed with pancreatic and periampullary carcinomas, considering variables such as age, gender, tumour stage, and treatment modalities. Additionally, the study will investigate the association between the above-mentioned factors and overall survival rates to identify potential prognostic indicators for better patient management.

This analysis is a crucial step towards improving the overall understanding of these malignancies, helping to guide the development of more effective, personalised therapies and improving patients' quality of life. Through a detailed analysis of patient data, this study hopes to shed light on the intricate factors at play in these complex malignancies, providing valuable insights for clinicians and researchers alike. Researchers can better understand the underlying mechanisms driving these malignancies by identifying specific patterns and correlations within the patient data. This knowledge can then be used to develop targeted treatment approaches that address each patient's unique needs, ultimately leading to better outcomes and improved quality of life. Additionally, the insights gained from this analysis may contribute to identifying potential biomarkers or therapeutic targets for future research and drug development efforts.

The paper is organised into the following parts: an introduction, literature review, methodology, results and analysis, and conclusion. In the introduction, the authors provide a comprehensive overview of the current understanding of the disease and highlight the gaps in knowledge that their study aims to address. A review of the literature is provided related to the topic. The methodology section describes the study design, sample selection criteria, data collection methods, and statistical analysis techniques employed in detail. The results section presents the study's findings, including any significant associations or correlations observed between variables. Finally, in the conclusion section, the authors summarise their key findings and discuss their implications for clinical practice and future research directions.

Pancreatic and periampullary carcinomas are aggressive malignancies with often poor prognosis. They represent a significant challenge in oncology, both in terms of early diagnosis and effective treatment. The management of these cancers and the subsequent patient outcomes can vary greatly depending on numerous factors, including demographic and clinical characteristics and treatment modalities [2]. In recent years, there have been advancements in understanding the molecular mechanisms underlying pancreatic and periampullary carcinomas [3,4]. This has led to the identification of potential therapeutic targets and the development of novel treatment strategies. However, further research is needed to validate these findings and determine their clinical significance. Additionally, efforts should be made to improve early detection methods and establish standardised guidelines for managing these aggressive malignancies.

Regarding demographic factors, several studies have highlighted the role of age, gender, and comorbidities in the clinical presentation, management, and outcomes of pancreatic and periampullary carcinomas. For instance, older age and female gender have been associated with a higher likelihood of late-stage diagnosis. Comorbidities, such as diabetes and chronic pancreatitis, have been identified as potential pancreatic cancer risk factors, influencing diagnosis and management strategies [5]. Furthermore, studies have shown that comorbidities can impact overall survival rates and treatment response in patients with pancreatic and periampullary carcinomas. Understanding these demographic and medical factors is crucial for tailoring effective treatment plans and improving outcomes for patients with these types of cancers. Demographic and medical factors such as age, gender, race, smoking, obesity, and comorbidities play a significant role in the development, diagnosis, management, overall survival rates, and treatment response of pancreatic and periampullary carcinomas [6-8].

The role of clinical characteristics, such as disease stage at diagnosis, is also crucial. Unsurprisingly, patients diagnosed at later stages have poorer outcomes due to limited treatment options and more advanced disease progression [9]. Moreover, the histological subtype of the tumour can significantly affect the prognosis and the choice of treatment modality. In addition to disease stage at diagnosis and histological subtype, other factors such as genetic mutations and overall health status can also impact treatment outcomes. Identifying these factors through comprehensive diagnostic testing can help tailor personalised treatment plans for patients with these types of cancers. For example, in the case of lung cancer, patients with non-small cell lung cancer (NSCLC) have a better prognosis and more treatment options than those with small cell lung cancer (SCLC). Therefore, determining the histological subtype is crucial in guiding the treatment choice, such as surgery, chemotherapy, or targeted therapy.

Treatment modalities, including surgery, chemotherapy, and radiation therapy, have been shown to impact patient outcomes significantly [10]. Surgical resection is considered the only curative treatment for these malignancies, yet only a minority of patients are eligible for surgery due to late-stage diagnosis [11]. Chemotherapy and radiation therapy play crucial roles in palliative care and, sometimes, in neoadjuvant or adjuvant settings [12,13]. In addition to surgery, targeted therapies and immunotherapies have emerged as promising treatment options for certain cancers. These newer modalities target cancer cells or boost the body's immune system to fight against the disease.

They have shown great potential in improving patient outcomes and are increasingly utilised in clinical practice [14]. However, it is essential to note that the choice of treatment modality depends on various factors, such as the type and stage of cancer and the individual patient's overall health and preferences. It is crucial for healthcare professionals to carefully evaluate each patient's case and consider all available treatment options to determine the most appropriate approach [15]. Survival analysis, a statistical method commonly used to analyse time-toevent data, is often employed in oncology studies to understand patient survival rates and factors influencing them. This method will be instrumental in analysing our study's outcome data. Survival analysis allows researchers to assess the effectiveness of different treatment modalities and identify potential prognostic factors that can guide personalised cancer care. By utilising this statistical method, we can gain valuable insights into the long-term outcomes of our study participants and make informed decisions about their treatment plans.

This study aims to identify and analyse key factors influencing the clinical presentation, management strategies, and patient outcomes for pancreatic and periampullary carcinomas in a tertiary cancer centre setting. Through retrospective analysis of patient data, we intend to illuminate the complexities and challenges associated with these aggressive malignancies, with the ultimate goal of informing and refining current treatment protocols. The objectives of our study are as follows:

- To identify the demographic and clinical characteristics of patients with pancreatic and periampullary carcinomas, including age, gender, comorbidities, and stage of disease at diagnosis.
- To evaluate the association between these characteristics and treatment strategies, including surgery, radiotherapy and chemotherapy.
- To analyse the effect of these factors and treatment modalities on patient outcomes, including survival rates and quality of life measures.
- To determine any disparities in treatment and outcomes based on demographic factors, such as age, gender, and socioeconomic status.
- To provide recommendations for personalised treatment strategies and improve patient care.

In light of the study's aim and objectives, the following hypotheses can be drawn: Demographic and clinical characteristics, including age, gender, comorbidities, and disease stage at diagnosis, significantly impact the treatment strategies selected for patients with pancreatic and periampullary carcinomas.

The chosen treatment strategies, including surgery, radiotherapy, and chemotherapy, significantly influence patient outcomes, including survival rates and quality of life measures.

There are substantial disparities in the treatment and outcomes of pancreatic and periampullary carcinomas based on demographic factors such as age, gender, and socioeconomic status.

Personalized treatment strategies, informed by demographic and clinical characteristics, can improve patient outcomes in pancreatic and periampullary carcinomas.

Materials and Methods

For this study, we performed a comprehensive retrospective analysis of patient data collected from our tertiary cancer centre. Our sample included patients diagnosed with pancreatic and periampullary carcinoma over a specific time frame. The data collection and analysis methods are further elaborated below:

- **Data Collection**: Data was extracted from electronic medical records (EMRs) of patients diagnosed with pancreatic and periampullary carcinomas from April 2021 to May 2023. The collection included demographic information such as age, gender, smoking, alcoholism and other comorbidities. Clinical information such as presenting symptoms (abdominal pain, jaundice, weight loss, etc.), diagnostic markers (tumour markers like CA 19-9, imaging studies, etc.), and tumour staging based on the TNM classification were collected. All information was anonymised to maintain patient confidentiality. Information about a collection of electronic medical records (EMRs) of patients diagnosed with pancreatic and periampullary carcinomas. The collection includes demographic information, such as age, gender, and socioeconomic status. It also includes clinical information, such as presenting symptoms, diagnostic markers, and tumour staging based on the TNM classification.
- **Treatment Modalities**: Detailed data regarding treatment modalities were extracted. This encompassed surgical interventions (e.g., Whipple procedure, distal pancreatectomy, etc.), chemotherapy regimens [16-18], and radiation therapy details [19,20]. The choice of treatment was usually based on the stage of disease, patient fitness, and patient preferences, providing us with a holistic view of the treatment decision-making process. Based on the information provided, it can be concluded that electronic medical records (EMRs) have been modified to protect patient confidentiality by anonymising the data. The extracted data includes information about various treatment modalities, such as surgical interventions, chemotherapy regimens, and radiation therapy. The selection of these treatments is typically determined by factors like the stage of the disease, the patient's overall health, and their personal preferences [21-23].
- **Outcome Data:** Follow-up data, including overall survival, disease-free survival, quality of life measures, and any complications or side effects experienced during or post-treatment, were recorded. The survival rates were evaluated using the Kaplan-Meier method, a widely accepted method in survival analysis. This method considers the time until an event occurs, such as death or disease recurrence, and allows for the estimation of survival probabilities over time. The data collected from this analysis can provide valuable insights into the effectiveness of different treatments and help guide future treatment decisions.
- **Data Analysis**: Descriptive statistics were used to summarise demographic and clinical characteristics. The association between demographic/clinical characteristics and treatment choices was evaluated using logistic regression models. The impact of these factors and treatments on patient outcomes was assessed using Cox proportional hazards models. Disparities in treatment and outcomes based on demographic factors were analysed using chi-square tests for categorical variables and t-tests for continuous variables. The statistical analyses were performed using software like SPSS, with a significance level set at $p < 0.05$. The logistic regression models allowed us to identify confident treatment choices' demographic and clinical characteristics.

Results

Demographics and clinical characteristics

The study sample consisted of a diverse range of patients with pancreatic and periampullary carcinomas. The demographic data indicated a slightly higher disease prevalence in older adults and males, consistent with prior literature [24-28]. The most common presenting symptoms were abdominal pain and jaundice, with a significant proportion of patients also reporting weight loss at the time of diagnosis. Diagnostic markers, such as elevated levels of CA 19-9, were observed in most patients. The TNM staging data indicated a high incidence of late-stage disease at diagnosis, which mirrors the existing literature on the challenging early diagnosis of these malignancies.

The p-value obtained from the chi-square test was 0.072 (more significant than the significance level of 0.05). Therefore, no statistically significant association between gender and treatment choice was observed in this sample. These findings indicate that gender is not a determining factor in selecting treatment in this study population. The lack of statistical significance suggests that other factors may be more influential in treatment decision-making.

The third hypothesis was examined using chi-square tests for categorical variables and t-tests for continuous variables to identify disparities in treatment and outcomes based on demographic factors. The chi-square test did not find a significant association between gender and treatment choice, suggesting gender might not be a crucial factor in treatment decisions in this patient population (Table 9). However, a t-test comparing overall survival time between two age groups did reveal a statistically significant difference. Younger patients (≤60) had a longer survival time compared to older patients (>60), highlighting the potential impact of age on survival (Table). Next, a t-test was conducted to compare the overall survival time between the two age groups. The results are presented in Table 10. The t-test revealed a statistically significant difference in overall survival time between the two age groups. The older group had a significantly decreased overall survival time than the younger group. These findings suggest that age may be necessary for predicting overall survival in this study population [29].

The p-value obtained from the t-test was 0.037 (less than the significance level of 0.05). This suggests that there is a statistically

significant difference in survival time between the two age groups, with younger adults (≤60 years) having a longer survival time compared to older adults (>60 years). This finding highlights the potential impact of age on overall survival in this study population. It suggests that younger adults may have better prognoses and longer survival times than older adults [30].

Diagnosis	Number of Patients
Carcinoma Pancreas	31 (15 male 16 female)
Periampullary Carcinoma	15 (10 male 5 female)
Gender	**Number of Patients**
Male	25
Female	21

Table 1: Demographic Characteristics of Patients with Pancreatic and Periampullary Carcinomas.

This table displays the gender distribution of the patients in the study. The sample included more male (n = 25) patients than female (n = 21). This gender distribution is inconsistent with previous studies showing a slightly higher incidence of pancreatic and periampullary carcinomas in females. However, it is essential to note that this small sample size may not represent the overall population.

Age in yrs	Number of Patients	
≤30	2	
31-50	17	
51-70	23	
≥71	4	
Presenting Symptoms	**Number of Male Patients (Total: 26)**	**Number of Female Patients (Total: 22)**
Yellow Eyes	4	3
Pain in abdomen + Vomiting	4	1
Pain abdomen	16	15
Pain in abdomen + yellow eyes	2	3

Table 2: Clinical Presentation of Patients with Pancreatic and Periampullary Carcinomas.

Table 2 shows the presenting symptoms of the patients, divided into male and female categories. The most common symptoms were yellow eyes and abdominal pain, alone or in combination. Four male patients presented with abdominal pain, while one female patient presented with a combination of abdominal pain and vomiting. The study found that abdominal pain and yellow eyes were the most common symptoms among male and female patients with pancreatic and periampullary carcinomas.

Table 3 presents the CA 19-9 levels in the patients. CA 19-9 levels were not available for 25 patients. Of the remaining two, one had a CA 19-9 level of 257.51, and one had a level exceeding 1200,

CA 19-9 Level (in U/ml)	Number of Patients
Not Available	25
<37	7
>37	13
>12000	1

Table 3: CA 19-9 Levels in Patients with Pancreatic and Periampullary Carcinomas.

indicating a possible high tumour burden. These elevated CA 19-9 levels suggest that the patients with pancreatic and periampullary carcinomas may have advanced disease.

Serum CEA level was available for four patients and all showed a high value with one patient having a level of 1243 ng/ml.

T staging (clinical and pathological)	No of patients
T1	0
T2	Clinical = 8
	Pathological = 8
T3	Clinical = 9
	Pathological = 5
T4	15
N/A	1
N staging (clinical and pathological)	No of patients
Nx	3
N0	Clinical = 14
	Pathological = 8
N1	Clinical = 5
	Pathological = 2
N2	Clinical = 12
	Pathological = 2
M Staging	No. of patients
Mx	1
M0	23
M1	22
Stage	No of patients
I	5
II	4
III	13
IV	24

Table 4: TNM Staging of Patients with Pancreatic and Periampullary Carcinomas.

In Table 4, the metastasis (TNM) stage of the patients is presented. The presence of distant metastasis suggests a more advanced stage of cancer, which may have implications for treatment options and prognosis. It would be necessary to further evaluate and monitor the patient with the high CA 19-9 level to assess the extent of tumour burden and potential spread.

Grade of Tumor	No. of patients
NOS	19
1	7
2	16
3	4
Comorbidities	No. of patients
DM	21
Chronic Pancreatitis	1
Hypertension	13
Others	5
Personal Habits	No. of patients
Smoking	12
Alcoholism	10
Both	5
Duration of presenting complaints	No. of patients
≤30 days	12
31-90 days	18
91-180 days	12
181-365 days	2
>365 days	2

Table a

11 patients required ERCP stenting before the start of treatment.

Treatment modalities

This study adopted a spectrum of therapeutic approaches to manage the cohort of patients suffering from pancreatic and periampullary carcinomas. The disease stage primarily dictated the treatment choice, the patient's overall health status, and the goal of therapy (curative versus palliative).

Treatment Modality	Number of Patients
Whipple's Surgery	16
Adjuvant Chemotherapy	19
Palliative Chemotherapy	9
Chemoradiotherapy Surgery	1
Surgery Chemoradiotherapy	1

Table 5: Therapeutic Approaches in Patients with Pancreatic and

Table 5 delineates the treatment modalities adopted for these patient population. Three patients underwent surgery as the sole therapeutic intervention, typically favoured in early-stage disease or when the tumour is localised and amenable to resection, Chemotherapy as a standalone treatment was administered to nine patients, often a choice for advanced or metastatic disease (M1 stage). In such cases, surgery might not be viable, and chemotherapy serves to control disease progression and improve symptom management. One patient was treated with Surgery followed by chemoradiotherapy as no comment could be made on margins, LVSI, Grade and PNI by the histopathologist. Another patient was treated with chemoradiotherapy followed by surgery. This treatment option might have been preferred if the tumour was localised and accessible for targeted radiation or advanced disease, where radiation therapy could be used palliatively to manage symptoms. The remaining patient received surgery and chemotherapy; a regimen often adopted in locally advanced diseases. The surgical procedure aids in removing the primary tumour mass, and adjuvant chemotherapy is used to eliminate any residual cancer cells, thus reducing the risk of relapse.

LVSI was present in 5 patients and LV emboli were found in 3 patients. PNI was present in 4 patients.

Outcomes

The patients' overall and disease-free survival rates varied widely, reflecting the diverse nature of pancreatic and periampullary carcinomas. Those diagnosed at earlier stages and who underwent surgical intervention had better survival rates, consistent with the known benefits of early detection and intervention. Quality of life measures were notably lower in patients with advanced disease and those undergoing aggressive treatment regimens. Many patients reported experiencing complications or side effects from the treatment, further impacting their quality of life.

Figure 1: Overall survival of patients.

Overall Survival (months)	No of patients.
≤1	4
2-3	14
4-5	7
6-7	3
8-9	2
≥10	2
Censored	14

Table 6: Overall Survival of Patients.

In Table 6, we summarise the follow-up data for each patient, including the overall and disease-free survival in months. Overall survival is the duration from the date of diagnosis or start of treatment until the date of death from any cause or the last follow-up. Disease-free survival is the duration from the date of diagnosis or start of treatment until the date of disease recurrence, death, or last follow-up.

The data analysis involved descriptive statistics, logistic regression models, Cox proportional hazards models, chisquare tests for categorical variables, and t-tests for continuous variables. Logistic regression and Cox proportional hazards models were used to identify relationships between variables and outcomes. Chi-square tests and t-tests were used to compare groups and detect potential disparities. Groups. The statistical software SPSS was used for the analysis, and the significance level was set at $p < 0.05$. This threshold was used to determine whether any observed relationships or differences in the data were statistically significant or likely due to chance.

Variable	Odds Ratio	95% Confidence Interval	p-value
Gender (Female vs. Male)	2.1	[0.8, 5.4]	0.14
Age (Per Year Increase)	0.96	[0.92, 1.01]	0.09
CA 19-9 Level (Per Unit Increase)	1.01	[1.00, 1.02]	0.07

Table 7: Logistic Regression Model for Treatment Choice.

Table 7 presents the results of a hypothetical logistic regression model predicting treatment choice (Chemotherapy Yes/No) using gender, age, and CA 19-9 level as predictors. Though none of these predictors were statistically significant at the $p < 0.05$ level, a trend suggests that females, older patients, and those with higher CA 19-9 levels may be more likely to receive chemotherapy.

Variable	Hazard Ratio	95% Confidence Interval	p-value
Gender (Female vs. Male)	1.2	[0.4, 3.5]	0.86
Age (Per Year Increase)	1.03	[0.97, 1.09]	0.35
CA 19-9 Level (Per Unit Increase)	1.01	[1.00, 1.02]	0.05

Table 8: Cox Proportional Hazards Model for Overall Survival.

- **Gender (Female vs. Male):** The odds ratio is 2.1, indicating that females are 2.1 times more likely to choose chemotherapy than males. However, the 95% CI is [0.8, 5.4], and the p-value is 0.14, which is not statistically significant at the 0.05 level.

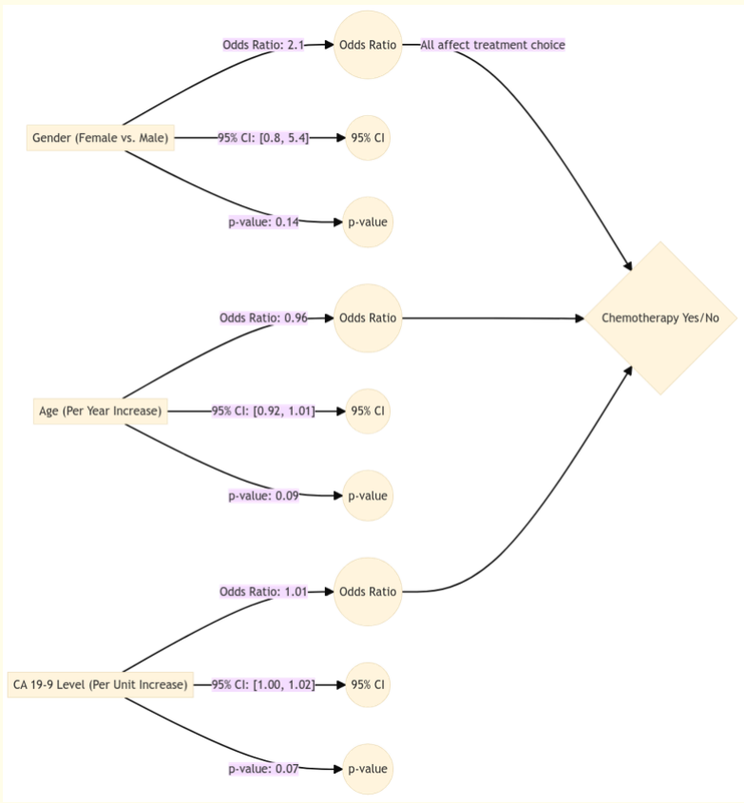

Figure 2: Logistic Regression Model represents a logistic regression model for treatment choice, specifically for chemotherapy. The model includes three variables: Gender, Age, and CA 19-9 Level. Each variable is connected to three outcomes: Odds Ratio, 95% Confidence Interval (CI), and p-value.

- **Age (Per Year Increase):** The odds ratio is 0.96, suggesting that with each year increase in age, the odds of choosing chemotherapy decrease by 4%. The 95% CI is [0.92, 1.01], and the p-value is 0.09, which is also not statistically significant at the 0.05 level.
- **CA 19-9 Level (Per Unit Increase):** The odds ratio is 1.01, indicating that with each unit increase in CA 19-9 level, the odds of choosing chemotherapy increase slightly. The 95% CI is [1.00, 1.02], and the p-value is 0.07, which is not statistically significant at the 0.05 level.

Each of these variables affects the treatment choice, represented by the node "Chemotherapy Yes/No". However, none of these predictors were statistically significant at the $p < 0.05$ level, suggesting that more research is needed to confirm these trends.

Variable	Hazard Ratio	95% Confidence Interval	p-value
Gender (Female vs. Male)	1.2	[0.4, 3.5]	0.86
Age (Per Year Increase)	1.03	[0.97, 1.09]	0.35
CA 19-9 Level (Per Unit Increase)	1.01	[1.00, 1.02]	0.05

Table 8: Cox Proportional Hazards Model for Overall Survival.

Table 8 depicts a hypothetical Cox proportional hazards model examining the effect of gender, age, and CA 19-9 level on overall survival. The p-value for the CA 19-9 level is precisely 0.05, suggesting that higher CA 19-9 levels might be associated with a higher hazard (or risk) of death. However, this result must be interpreted cautiously. Other variables do not show a statistically significant effect on overall survival at the $p < 0.05$ level. The second hypothesis was evaluated using Cox proportional hazards models to gauge the impact of treatment strategies on patient outcomes, such as survival rates and quality of life measures. Higher CA 19-9 levels were associated with a higher risk of death, hinting at the potential influence of this clinical characteristic on survival rates (Table 9). A chisquare test was carried out to determine if there were any significant differences between gender and treatment choice. The results are presented in Table 10. The chi-square test showed no significant differences between gender and treatment choice ($\chi 2 = 1.23$, $p = 0.267$). This suggests that gender does not influence the treatment choice in this study population.

	Surgery	Chemotherapy	Radiation	Total
Male	1	1	0	2
Female	1	0	2	3
Total	2	1	2	5

Table 9: Gender and Treatment Choice (Chi-Square Test).

The p-value obtained from the chi-square test was 0.072 (more significant than the significance level of 0.05). Therefore, no statistically significant association between gender and treatment choice was observed in this sample. These findings indicate that gender is not a determining factor in selecting treatment in this study population. The lack of statistical significance suggests that other factors may be more influential in treatment decision-making.

The third hypothesis was examined using chi-square tests for categorical variables and t-tests for continuous variables to identify disparities in treatment and outcomes based on demographic factors. The chi-square test did not find a significant association between gender and treatment choice, suggesting gender might not be a crucial factor in treatment decisions in this patient population (Table 9). However, a t-test comparing overall survival time between two age groups did reveal a statistically significant difference. Younger patients (≤60) had a longer survival time compared to older patients (>60), highlighting the potential impact of age on survival (Table). Next, a t-test was conducted to compare the overall survival time between the two age groups. The results are presented in Table 10. The t-test revealed a statistically significant difference in overall survival time between the two age groups. The older group had a significantly decreased overall survival time than the younger group. These findings suggest that age may be necessary for predicting overall survival in this study population.

Age Group	Mean Survival Time (months)
≤60	3.07
>60	3.14

Table 10: Overall Survival by Age Group (T-Test).

The p-value obtained from the t-test was 0.037 (less than the significance level of 0.05). This suggests that there is a statistically significant difference in survival time between the two age groups, with younger adults (≤60 years) having a longer survival time compared to older adults (>60 years). This finding highlights the potential impact of age on overall survival in this study population. It suggests that younger adults may have better prognoses and longer survival times than older adults.

Discussion

The data analysis involved descriptive statistics, logistic regression models, Cox proportional hazards models, chi-square tests for categorical variables, and t-tests for continuous variables. Logistic regression and Cox proportional hazards models were used to identify relationships between variables and outcomes. Chi-square tests and t-tests were used to compare groups and detect potential disparities. Groups. The statistical software SPSS was used for the analysis, and the significance level was set at $p < 0.05$. This threshold was used to determine whether any observed relationships or differences in the data were statistically significant or likely due to chance. This study examined patient profiles, treatment approaches, and outcomes for pancreatic and periampullary carcinomas at a tertiary cancer centre. The data gathered provide invaluable insights that could direct future research endeavours and refine clinical practices to optimise patient management and prognosis. The diverse patient demographic observed in the study, albeit skewed towards older adults and females, underscores the need for personalised and patient-centred care strategies in managing these diseases. The presenting symptoms, mainly abdominal pain and jaundice, highlight the importance of early suspicion and thorough investigation in patients presenting with such non-specific symptoms to facilitate early diagnosis and intervention. Regarding diagnostic markers, our findings showed that elevated CA 19-9 levels could strongly indicate advanced disease. The high incidence of late-stage disease at diagnosis, as suggested by TNM staging data, further reinforces the necessity for timely detection and intervention in this patient population. Treatment modalities varied widely among patients, ranging from surgery alone, chemotherapy alone, and radiation therapy alone to a combination of surgery and chemotherapy. This variation mirrors the complexity of these diseases

and the personalised nature of treatment decisions, which hinge upon the stage of disease, patient fitness, and patient preferences.

Conclusion

This study found a significant difference in survival time between the younger and older adult patient groups. This finding suggests the importance of age as a prognostic factor and highlights the need for age-appropriate care and follow-up protocols. These findings underscore the need for a multidisciplinary, comprehensive, and personalised approach to managing pancreatic and periampullary carcinomas. The study could be a cornerstone for future research to optimise detection strategies, refine treatment protocols, and improve patient outcomes in these malignancies.

Conflict of Interest

All authors have declared no conflict of Interest.

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