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Research Article

Evaluation of Clinical Data of Patients with Pancreatic Cancer

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Abstract

Objectives: The main purpose of the study is to determine the prognostic factors by retrospectively evaluating the clinical data of patients with pancreatic cancer.

Methods: The patients diagnosed with pancreatic adenocarcinoma (132) were analyzed retrospectively. Age, gender, blood group, tumour localisation, tumour stage (TNM classification), postoperative chemotherapy, postoperative radiotherapy status, progression-free survival and survival time as prognostic factors were evaluated. Women and men, tumours located in the head versus in the trunk and tail regions, received chemotherapy and/or radiotherapy versus those who didn't, patients in stage 2, patients with stage 3, stage 4, "A", "B", "O" blood groups were compared with each other and subgroup analysis was performed.

Results: In our study, 59.8% were male and 40.2% were female. Progression-free survival and survival times of patients with stage 2 cancer were found to be significantly longer then patients with stage 3 and 4 ($p<0.01$). Among stage 2 and 3 patients, 45 (38.6%) patients, 26 patients with stage 4 (19.6%) received chemotherapy, and 9 patients (6.81%) received chemotherapy and radiotherapy concurrently. Tumour was most common in the head side [(70.5%)]. Progression-free survival and survival of tumour localisation, receiving chemotherapy, and tumour stage was found to affect the duration of the study statistically significantly ($p<0.001$).

Conclusion: It was determined that chemotherapy and stage affected progression-free survival and survival times with statistical significance. Ca 19-9 and CEA values can be used in the follow-up of patients with pancreatic cancer. EUS is usefull at pancreas cancer diagnosıs and staging.

Keywords: Pancreatic cancer, Prognostic factors, Ca 19-9, CEA, EUS

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Cancer is the second most common cause of death after cardiovascular diseases with a rate of 22% both in the world and in our country.[1] Pancreatic cancer is the 9th most common cancer in our country and its annual incidence is; It has been found to be around 4.5/100,000.[2] Pancreatic adenocarcinoma is among the top 10 causes of cancer-related deaths in developed countries.[3,4] Among all gastrointestinal cancers, pancreatic cancer has attracted attention with its increasing frequency in recent years.[5] In most countries, its incidence has increased dramatically as living conditions have become more westernised. The highest incidence rate occurs in the 7th and 8th decades of life, and the diagnosis is made at an average age of 60-65 years.[6]

Adenocarcinoma is the most common histology, accounting for 95% of cases. It is seen 50-100% more frequently in men than in women. Current imaging techniques have shown that; despite advances in surgery, chemotherapy, and radiotherapy, the life expectancy of patients with pancreatic cancer has increased slightly.[7] Pancreatic cancer; it is one of the few cancer types with 100% mortality.[8,9] It has the shortest life expectancy among all cancer types. [9] Pancreatic cancer, which is the gastrointestinal system tumour with the worst prognosis with an incidence close to its mortality, has the worst prognosis among all solid tumours.[10]

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Pancreatic cancer quickly results in death. Compared with all cancer types, the 5-year survival rate is 10% in patients diagnosed with pancreatic cancer at all stages.[11] When the tumour is detected only when it has invaded the pancreas, the 5-year survival is only 25-30% after surgery.[10] Many factors thought to be effective on the prognosis in pancreatic cancer have been the subject of research. Gender, age, blood group, body mass index, tumour localization, histological grade, stage, metastatic lymph node, tumour markers (CEA, Ca 19-9), preoperative haemoglobin and albumin level, chemotherapy, radiotherapy administration, resected pancreatic cancer investigated as prognostic factors in patients In the treatment of pancreatic cancer, one or more of the three treatment modalities, surgery, radiotherapy and chemotherapy, can be used in combination. Only about 15-20% of newly diagnosed pancreatic cancers is resectable and is added to adjuvant chemotherapeutic therapy.[12] The stage of the disease should be considered in the treatment approach. Surgery is the only potential curative treatment for pancreatic cancer. In patients with distant organ metastases and locoregional irresectable tumours, the primary treatment option is chemotherapy, and radiotherapy can be added to chemotherapy.[13]

In this retrospective study, gender, age, occupation, blood type, symptoms and clinical findings at the time of admission of 132 patients diagnosed with pancreatic cancer and admitted to Zonguldak Karaelmas University Faculty of Medicine Application and Research Hospital Internal Diseases Medical Oncology Clinic between February 2000 and March 2011, smoking and alcohol use, systemic diseases, family history of cancer, tumour localization, histological grade and stage, metastatic lymph node, whether surgery was performed, chemotherapy and radiotherapy were investigated. In this study, it was aimed to evaluate the effects of these prognostic factors on survival times in detail.

Methods

Group Design

The study group consisted of 132 patients who applied to Zonguldak Karaelmas University Medical Faculty Application and Research Hospital Medical Oncology Outpatient Clinic between February 2000 and March 2011 and were diagnosed with pancreatic adenocarcinoma in our hospital or another medical center. Information about the patients was obtained by retrospectively examining the patient files. Information about patients who did not come for control for a long time was updated as of March 2011 by calling their homes.Ethics committee approval for the study was received from Zonguldak Bülent Ecevit University Faculty of Medicine Hospital Ethics Committee Committee.

Patients' age which cancer was diagnosed, gender, occupation, complaints on admission, clinics at the time of admission, blood types, smoking and alcohol use, family history of cancer, whether or not they were operated on, the localization of the tumour, its stage, treatment modalities and chemotherapy protocols applied to the patients, local The site of recurrence and/or metastasis, the treatment modalities of the patients with metastasis, the last date of admission to our polyclinic, the latest updated status, the date of death of the patients who died were recorded, and the prognostic factors affecting the survival time: age, gender, blood type, tumour localization, tumour location. Stage (TNM classification), postoperative chemotherapy, and postoperative radiotherapy status were investigated.

General follow-up period; time from diagnosis to end of study, overall survival; The time from the date of diagnosis to the date of death or the update of patient information for surviving patients, and progression-free survival were expressed as the time from the date of diagnosis to the development of local recurrence and/or metastasis.

Statistical Analyses

SPSS for Windows 18.0 package program was used in the analysis of the study. In the study, variables with categorical values are given with numbers and percentages, and measurement variables with continuous values are given with mean, median, standard deviation, minimum and maximum values. The conformity of the measurement variables to the normal distribution was analysed with the Shapiro Wilks test. Kruskal Wallis analysis of variance was used to compare the variables in 3 groups, and the Mann Whitney U test was used for comparisons of 2 groups. Wilcoxon test was used for in-group comparisons of measurement variables according to the onset time. Correlation analysis was performed for the significance of the change between the measurement variables and the significance was interpreted with the Spearman correlation coefficient. Chi-square test was used for intergroup comparisons of categorical variables. Comparisons with a p value below 0.05 were considered significant in the analyses in the study.

Results

The distribution of 132 cases with pancreatic adenocarcinoma, taken as the study group, by gender is given in Table 1. There were 9 cases under the age of 45, 39 cases between the ages of 45-60, and 84 cases over the age of 60. The mean age of our cases was 65 (±12). The male/female ratio was found to be 1.49.

A palpable mass was found on physical examination in 18 (13.6%) of the cases. When pancreatic adenocarcinomas

Table 1. The distribution of 132 cases with pancreatic adenocarcinoma, taken as the study group, by gender

	Patient number (n)	Percentage %		Patient number (n)	Percentage %
Gender			Alcohol use status		
Male	53	40.2	Use	10	7.6
Female	79	59.8	Not use	112	92.4
Total	132	100	Total	132	100
Patient's complaint			Concomitant disease		
Abdominal pain	118	89.4	No concomitant disease	42	31.8
Jaundice	53	40.2	Diabetes mellitus	14	10.6
Vomiting	32	23.5	Hypertension	38	28.8
Weight loss	29	22	Diabetes mellitus and hypertension	26	19.7
Back pain	6	4.5	Malignancy	7	5.3
Bloating	5	3.8	Chronic viral hepatitis	5	3.8
Itching	3	2.3	Total	132	100
Blood group			Family history of cancer		
A Rh+	63	47.7	None	123	93.2
B Rh+	18	13.6	There is 1 person in the family	5	3.8
0 Rh+	39	29.5	There are 2 people in the family	4	3
AB Rh+	6	4.5	Total	132	100
A Rh -	5	3.8	Surgical procedure		
B Rh -	1	0.8	Whipple	45	34
Total	132	100	Inoperable	41	31
Tumour localization			Unresectable	10	7.5
Top	93	70.5	First metastasis		
Body	25	19	Unknown	2	1.5
Tail	14	10.5	Liver	84	63.6
Total	132	100	Vascular	23	17.4
Smoking status			Peritoneum	14	10.6
Use	59	44.7	Lung	9	6.8
Not use	73	55.3	Staging (American Joint Committee on Cancer, 2010)		
Total	132	100	Stage 2 (T1-3 N0-1 M0)	34	26
			Stage 3 (T4 any N M0)	27	20
			Stage 4 (Any T any N M1)	71	54
			Total	132	100

were evaluated according to their localizations, 70.5% were located on the head, 19% on the trunk, and 14% on the tail. Accordingly, it was determined that the tumour was most frequently encountered in the head. When the cases were analysed according to their smoking characteristics, it was found that 59 (44.7%) of 132 cases were smokers, and 73 (55.3%) were non-smokers. The number of pack-years in smokers ranged from 10 to 150, with an average of 32.2±22.3 pack-years. When the cases were analysed according to their alcohol use characteristics, it was found that 10 (7.6%) of 132 cases used alcohol, and 122 (92.4%) did not use alcohol. It was not possible to reach the amount of alcohol consumed in patients who used alcohol due to insufficient data.

When the cases were considered in terms of comorbid systemic diseases, the most common comorbid systemic disease was hypertension, and diabetes mellitus was the second most common comorbid disease. When the family history of cancer was investigated, a family history of cancer was found in 9 patients, but not in 123 patients. While cancer was found in one person in the family in 5 of the patients with a family history of cancer, cancer was found in 2 people in the families of 4 people. Diagnostic laparoscopy and/or laparotomy were performed in 36 (27.5%) cases. When the data of the regions where metastases were detected for the first time were analysed, it was determined that the tumours most frequently made their first metastases to the liver. The second most common metastasis was to vascular structures.

When the progression-free survival and overall survival times of our cases were evaluated according to gender; There was no statistically significant difference between male and female genders in terms of survival ($p>0.05$).

It was observed that 26 of our cases underwent diagnostic endosonography, and 11 of these 26 patients were Stage 2, 2 were Stage 3, and 14 were Stage 4. There were 5 patients who had CT angiography as well as EUS. Twenty of these cases had pathology results of the pancreas and surrounding tissue. It was observed that the diagnosis and stages of EUS and CT angiography and/or CT results of our cases were similar and the pathology results were consistent with these.

Case

A 70-year-old male patient applied with the complaint of abdominal pain for 6 months. Abdominal pain was localized in the lower quadrants and was colic in character. Diabetes mellitus and hypertension was present. Abdominal CT scan of our case, which was taken due to abdominal pain, was reported as a mass of 5 cm in diameter in the pancreatic body (Fig. 1A), suspicious hypodense areas with a diameter of 8 mm in segment 8 of the right lobe of the liver and 6 mm in diameter in segment 6 of the liver (Fig. 1B). CA 19-9: 12000 ng/ml and CEA 120 ng/ml. Endosonography was performed to the patient with pancreatic body and a mass lesion of 5x5 cm heterogeneous echogenicity is seen and settled. İİAB was performed from the lesion with a 22 G needle (Fig. 1C).

The result of the biopsy was reported as pancreatic adenocarcinoma (Fig. 2A and 2B). The patient was offered an operation, but the patient refused. The patient was started on chemotherapy; after 4 cycles of chemotherapy, the patient died.

CA 19-9: 12000 ng./ml and CEA 120 ng./ml. Endosonography was performed on the patient with rheumatoid arthritis, and a mass lesion of 5x5 cm heterogeneous echogenicity located towards the tail part of the pancreatic body was seen. When the progression-free survival rates and overall survival times of our cases were evaluated according to tumour localization; a statistically significant difference was

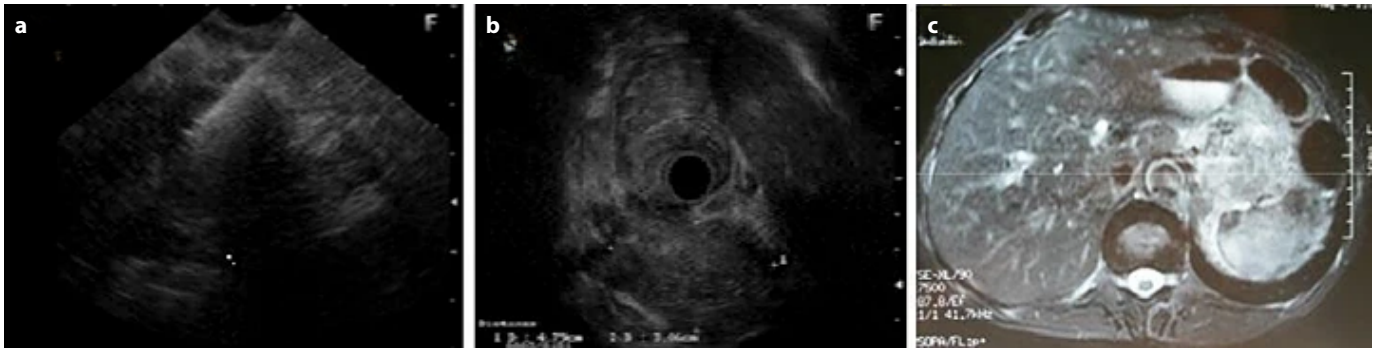

Figure 1. (A-B) EUS Images **(C)** Abdominal CT scan images.

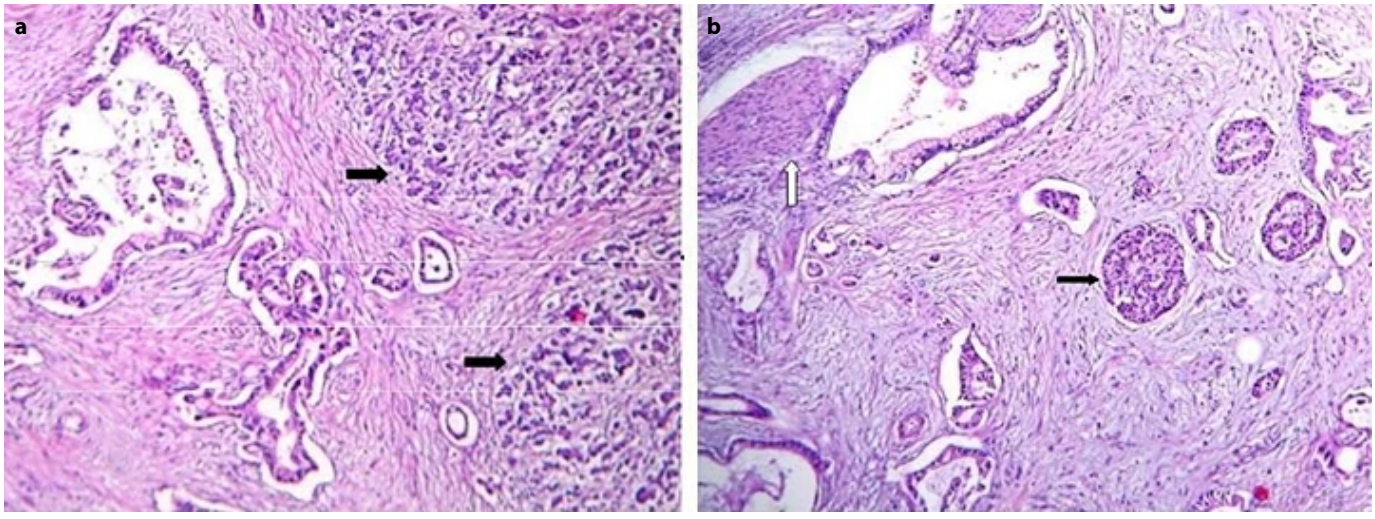

Figure 2. The results of the biopsy.

The result of the biopsy was reported as pancreatic adenocarcinoma **(A-B)**. The patient was offered an operation, but the patient refused. The patient was started on chemotherapy; after 4 cycles of chemotherapy, the patient died.

found in terms of survival times of those with tumour localization in the head compared to those located in the trunk and tail. (p<0.001). When progression-free survival and overall survival times were evaluated according to blood group, no statistically significant difference was found in terms of survival (p>0.05). When evaluated the progression-free survival and overall survival times by stage; A statistically significant difference was found in terms of survival time (p<0.01). Accordingly, progression-free and overall survival times of patients with stage 2 cancers were found to be significantly longer when compared to patients with other stages (Table 2).

It was observed that 45 of 132 cases were Stage 2 or 3 (34%) and received adjuvant chemotherapy, 26 (19.6%) were stage 4 and were evaluated as inoperable and received chemotherapy. It was observed that 9 of the cases received radiotherapy. Gemcitabine and cisplatin chemotherapy regimen were given to all those who accepted the treatment. When the progression-free survival and overall survival times were evaluated according to the chemotherapy receiving status of the cases; A statistically significant difference was found in terms of progression-free survival and overall survival in all stages (p<0.001). When the survival times of our cases were evaluated according to gender; There was no statistically significant difference between female and male genders in terms of survival time (p=0.08) (Table 2).

When the overall survival of our cases was evaluated according to whether they received radiotherapy or not, it was seen that 9 of them received radiotherapy and receiving radiotherapy did not increase the survival time statistically (Table 3).

When the diagnosis/progression/last visit moments of Ca 19-9 and CEA values of our cases were compared; It was observed that there was a statistically significant increase from the diagnosis towards the last visit (p=0.01) (Table 4).

Table 2. Survival times of patients

	Patient number (n)	Progression-free survival Median value (min-max)	Overall survival Median value (min-max)	p
Gender				
Male	79	3 months (1-40)	5 months (1-48)	>0.05
Female	53	4 months (1-40)	7.5 months (1-48)	
Total	132	4 months (1-40)	6.5 months (1-48)	
Tumour localization				
Top	93	4 months (1-40)	8 months (1-48)	<0.001
Body and Tail	39	2 months (1-12)	3 months (1-20)	
Total	132	4 months (1-40)	6.5 months (1-48)	
Blood group				
A	67	3 months (1-22)	5 months (1-26)	>0.05
0	39	4 months (1-40)	5 months (1-48)	
B+AB	26	4.5 months (1-40)	6.5 months (1-48)	
Total	132	4 months (1-40)	6.5 months (1-48)	
Stage				
Stage 2	34 (%26)	12 months (4-40)	20 months (7-48)	<0.001
Stage 3	27 (%20)	5 months (1-12)	8 months (1-18)	
Stage 4	71 (%54)	2 months (1-9)	3 months (1-20)	<0.001
Total	132 (%100)	4 months (1-40)	6.5 months (1-48)	
Chemotherapy status				
Stage 2	34 (%26)	12 months (4-40)	20 months (7-48)	<0.001
Stage 3	27 (%20)	5 months (1-12)	8 months (1-18)	
Stage 4	71 (%54)	2 months (1-9)	3 months (1-20)	<0.001
Total	132 (%100)	4 months (1-40)	6.5 months (1-48)	
Stage 4				
Receive chemotherapy	26	3.5 months (1-9)	5.5 months (1-20)	<0.001
Did not receive chemotherapy	45	1 months (1-4)	2 months (1-6)	
Total	71	2.5 months (1-9)	3 months (1-20)	

Table 3. Survival times according to whether received radiotherapy or not

	Patient number (n) (min-max)	Mean value±SD	p
Radiotherapy			
Receive radiotherapy	9	9 months ±7 (0-20)	>0.05
Did not receive radiotherapy	123	12 months ±9 (3-48)	
Total	132	12 months ±9 (3-48)	

Discussion

Pancreatic cancer accounts for 3% of all cancers. It is the fourth most common type of cancer for women and men.[14] It is a cancer type with the worst prognosis among all known cancers in the world, with 124000 newly diagnosed patients per year, with almost the same number of deaths, and with a five-year survival rate below 5%.[15] Pancreatic cancer is the ninth most common type of cancer in our country. Its annual incidence was found to be around 4.5/100,000.[2] The average survival after diagnosis is 3-6 months. Two-year survival is observed at only 10%. Mean survival with surgical resection has increased to 17-20 months. However, five-year survival does not exceed 10% despite resection.[16] Only 5-10% of pancreatic cancers are detected before the age of 60. 80% of the patients are over 60 years old.[11,17] In our study, most of our cases were found over 60 years of age (63.6%), which was consistent with the conduction data. Its incidence is higher in men than in women (mean 3/2).[18] The male/female ratio was found to be 79/53 in our study, which is consistent with the aforementioned data.

In our study, in accordance with the literature, when pancreatic adenocarcinomas were evaluated according to their localization, it was seen that 70.5% were located in the head, 19 in the trunk, and 10.5% in the tail. When the progression-free survival and overall survival times were evaluated according to tumour localization in our study; In accordance with the literature, the survival times of those with head localized tumours were found in the trunk and tail was found to be longer than those located in the tail with statistical significance (p<0.001). Pancreatic cancer most commonly involves the pancreatic head. 60% of patients with pancreatic cancer are found in the head of the pancreas, 15% in the body, and 5% in the tail.[19,20]

In our study, it was found that 59 cases (44.7%) had no history of smoking and 73 cases (55.3%) had no history of smoking. The median value of the number of packs smoked in the cases was 32 pack-years. Epidemiological studies show that smoking is associated with many types of cancer (e.g., stomach, oral cavity, oesophagus, larynx, bladder, kidney, pancreas, and cervix). 30% of pancreatic cancers occur due to smoking.[21] It is a known fact that smoking is a risk factor for pancreatic cancer. Pancreatic cancer incidence is 75% higher in smokers than non-smokers. The risk of developing pancreatic cancer continues for 10 years after quitting smoking. It is stated that smoking a pack of cigarettes a day for a year increases the risk of developing pancreatic cancer with 2%. The risk of pancreatic cancer development increases linearly with increasing doses.[22] Studies have emphasized that smoking increases pancreatic cancer and this is dose-dependent.[21,23] In one study, if all of Europe had stopped smoking at the beginning of the century; it has been stated that there will be a decrease in deaths due to pancreatic cancer per 150,000 people, and this decrease will be reflected as 30% in women and 45% in men. It has been reported that there will be 39000 fewer deaths due to pancreatic cancer.[22]

In our study, when the cases were analysed according to their alcohol use characteristics, it was observed that 10 (7.6%) of 132 subjects used alcohol, and 122 (92.4%) did not use alcohol. Since the history of alcohol was not adequately questioned in the history of the patients included in our study, sufficient information on alcohol use could not be obtained. Alcohol use is considered a risk factor for pancreatic cancer, but the risk associated with how much alcohol intake is unknown. In the study of Gupta et al., a relationship was found between the consumption of at least five glasses of alcohol per day and the risk of developing pancreatic cancer. In this study, it was stated that the risk of pancreatic cancer was found to be significantly higher, but it was not statistically significant.[14] In some large epidemiological studies, alcohol has been found to be highly as-

Table 4. Ca 19-9 and CEA values

	Diagnosis time	In case of progression	Last visit moment	p
Tumour marker				
Ca19-9 [(ng/ml±SD)	5753±15250	6542±14020	7554±18596	<0.001
(min-max)]	(2-118000)	(3-100000)	(4-150000)	
CEA [(ng/ml±SD)	29±73	51±161	48±150	<0.001
(min-max)]	(1-500)	(0-1500)	(0-1500)	

sociated with pancreatic cancer. The American Department of Health for Men has stated that up to 28 grams of alcohol per day, and only half of it, can be used without the risk of developing cancer in women. Alcohol use is among the top 10 factor groups all over the world in terms of pancreatic cancer. It can be suggested that it may act as an auxiliary carcinogen as well as direct carcinogens such as alcohol, smoking and dietary factors.

In our study, it was determined that our pancreatic cancer cases had the most common type A blood (51.5%). Secondly, they had O blood group (29.5%). It was observed that our other pancreatic cancer cases had blood group B (14.5%) and blood group AB (4.5%). When the progression-free survival times of our cases were evaluated according to blood groups; The median is 3 months for those with blood group A (between 1 and 22 months), median 4 months (between 1-40 months) for those with blood group O, and 4.5 months (between 1-40 months) for those with blood group B and AB seen. In addition, overall survival is median 5 months (range 1-26 months) for blood group A, median 5 months (range 1-48 months) for blood group O, and median 6.5 months for blood group B and AB (1-48 months). When the survival times of our cases were evaluated according to blood groups, no statistically significant difference was found in terms of survival time ($p>0.005$).

It has been determined that ABO, one of the blood groups, is associated with pancreatic cancer. In the study conducted by Qiwen et al., it was determined that people with A and AB blood groups have a higher risk of developing pancreatic cancer than those with O blood group.[25] It has not been determined that those with blood group B have a higher risk of developing pancreatic cancer than those with blood group O. In the evaluation of patients with pancreatic cancer included in the study in terms of survival; one-year survival was 43%, three-year survival was 6%, and five-year survival was 2%. According to A, B, AB and O blood groups, the survival was determined as 9 months for those with A blood group, 9.0 months for those with B blood group, 9.1 months for those with AB blood group and 11.1 months for those with O blood group; no difference was found statistically significant among them.[24] In the study of Greer et al., in the USA, compared to blood group 0; A, B, AB blood groups were found to have a high risk of developing pancreatic cancer.

They found that 131 patients with pancreatic cancer, especially those with A blood group, were statistically significantly higher at a rate of 47.63% when compared to the non-patient population and 277133 individuals with A blood group. 88 patients with blood type O, 32%. They found that it was statistically significantly lower when compared with the non-ill population with a ratio of 2 and 311795 individuals with O blood group 51% in our study.[26] It was determined that the highest rate of pancreatic cancer patients was in the A blood group with a ratio of 5 %, and the O blood group was the second with 29.5%. In the study, which was taken from 12 prospective studies by Wolpin et al., a control group of 1583 people was recruited against 1534 pancreatic cancer patients. When the blood groups of the patients were examined, 41.5% of the patients were in O blood group, 40.6% in A blood group, 12.3% in B blood group, 5.6% in AB blood group. In patients with pancreatic cancer, A, B, AB blood type is excluded. They found that those in the O blood group were higher than those in the O blood group, but this difference was not statistically significant. It has been stated that the risk of pancreatic cancer increases as the number of non-O alleles increases, and the risk increases the most especially in the BB genotype.[25]

The most prominent symptoms of pancreatic cancer patients at admission are abdominal pain, weight loss and jaundice.[27,17] Among the complaints of our cases, the three most common main complaints, respectively, were jaundice (40.2%), vomiting (23.5%). and weight loss (22%). It is seen that our results are compatible with general literature knowledge. In the treatment of pancreatic cancer, one or more of the three treatment modalities, surgery, radiotherapy and chemotherapy, can be used in combination. Surgery is the only potential curative treatment method in pancreatic cancer.[24] The TNM Staging system is used to diagnose pancreatic cancer, determine prognosis, and shape treatment. Pancreatic cancer is usually detected at an advanced stage. In our study, 12 (9.1%) of the cases were found to be stage 2, 45 (34.1%) stage 3 and 75 (56.8%) stage 4 at the time of diagnosis.

In our study, when the progression-free survival of the patients in stage 2 is considered, the median is 12 months (between 4 and 40 months), the median survival of the patients in stage 3 is 5 months (between 1-12 months), and the median survival of the patients in stage 4 is 2 months (range 1 to 9 months). In terms of overall survival, patients in stage 2 have a median overall survival of 20 months (between 7 and 48 months), patients in stage 3 have a median survival of 8 months (between 1-18 months), and patients in stage 4 have a median survival of 3 months (between 1 and 20 months).

Progression-free survival and overall survival times by stage when evaluated; statistically significant difference was found. Accordingly, when the progression-free and overall survival times of the patients with Stage 2 cancer were compared with the patients in stage 3 and 4 separately, they were found to be statistically significantly longer.

Whipple operation was performed in 45 (34%) of our cases, 41 (31%) were found to be inoperable, and 10 (7.5%) were unresectable. Less than 20% of pancreatic cancers are found to be curatively resectable at the time of diagnosis.[28]

In our study, in 20 of the patients (26 patients) who underwent EUS, the diagnosis and staging of EUS was found to be compatible with pathologies of computed tomography (CT) and pancreas and/or surrounding organs. In a study, out of 34 patients who had negative or suspicious results in terms of pancreatic cancer despite clinical suspicion on CT, a definitive diagnosis of pancreatic cancer was made in 88% of them by fine needle aspiration biopsy accompanied by EUS.[29]

In our study, it was seen that 61 of 132 patients were in Stage 2 and 3, 45 received adjuvant chemotherapy, 71 patients were Stage 4 and were evaluated as inop, and 26 received chemotherapy. Gemcitabine and cisplatin chemotherapy regimen were given to all those who accepted the treatment. When the progression-free survival times were evaluated according to the presence of chemotherapy, the progression-free survival and overall survival times were found to be statistically significantly longer in patients who received adjuvant chemotherapy at all stages, and in patients who were inoperable but did not receive chemotherapy. When the survival times were evaluated according to the presence of radiotherapy in the postoperative period; there was no statistically significant difference in terms of survival time.

Despite chemotherapy, the average survival time of pancreatic cancer patients with advanced disease is six months. Gemcitabine has been the standard systemic treatment agent in the palliative treatment of pancreatic cancer in the last 10 years, and its one-year survival rate was 18%. Although gemcitabine has been found to have clinical benefit in patients with pancreatic cancer, the five-year survival of patients is only 5%.[28] Calcer and Ellenberg did not give treatment to some of the 43 patients after curative surgery without metastasis, while they gave CRT to some of them. The application of CRT after surgery was found to be statistically significantly effective in this study. It was found that there was a significant difference between those who received adjuvant CRT at 20 months and those who only underwent surgery at 11 months.[20] In a retrospective study conducted by Corsini et al., it was found that post-surgical chemoradiotherapy increased survival at a statistically significant rate with 19.2 months versus 25.2 months compared to surgery alone.[14] According to the European cancer research and treatment organization, adjuvant chemoradiotherapy has no effect on progression-free survival or overall survival. A progression-free survival of 17.4 months was found in the group receiving adjuvant chemoradiotherapy, whereas a progression-free survival of 16 months was found in the group receiving post-surgical chemoradiotherapy.[14] Pancreatic cancer treatment also varies according to the geography. While chemoradiotherapy is applied after chemotherapy in North America, chemotherapy alone is also preferred in Europe. At the time of diagnosis of pancreatic cancer, only 10-20% is detected while it is resectable. Chances of performing curative resection; It is 14%. The prognosis after resection is poor in pancreatic cancer without metastatic LN involvement. Three-year life expectancy is 27% and life expectancy duration is 15-19 months.[32]

In patients with pancreatic cancer, EORTC applied 40 Gy radiotherapy with 5-FU in some patients after resection, and in some patients just followed up after resection. When these two groups are compared; found their survival as 17.1 versus 12.6 months, respectively.[33] ESPAC-1 administration of chemotherapy alone after resection, and after resection only after observation, the survival was found to be statistically significantly different at the level of 20.1 months versus 15.5 months, respectively.[34] On the other hand, the mean survival of the arm receiving chemotherapy was found to be lower than in the observation; 15.9 months vs. 17.9 months, respectively.[39] According to RTOG 9704 made in the USA, it was compared to receiving radiotherapy with gemcitabine together with 5-FU versus receiving radiotherapy with only 5-FU and adding gemcitabine increased survival; 18.8 months vs. 16.7 months.[35] Oettle et al. took 368 patients randomly resected for pancreatic cancer, gave some chemotherapy to gemcitabine, and only observed some of them. These two groups were followed for 6 months and a statistically significant difference in disease-free survival was found in the gemcitabine group versus the observed one, with 13.4 versus 6.9 months. When overall survival was considered, a difference was found at 22.1 versus 20.2 months.[34] Among gemcitabine and 5-FU+ leukoverin, it was suggested to choose gemcitabine as an adjuvant therapy in CONKO-001,[34] ESPAC-3[37] and RTOG 9704,[35] but studies on radiotherapy were inconclusive. It was emphasized that there was no statistically significant increase in survival in the ESPAC-3 study. In this study, it was emphasized that gemcitabine was more beneficial in terms of safety and dose intensity.[13]

In our study, in accordance with the literature, when the patients were evaluated according to their Ca 19-9 and CEA values; when the diagnosis/progression/last visit times were compared, it was observed that there was an increase in statistical significance from the diagnosis to the last visits. Some determinants have been studied to determine the response to treatment in pancreatic cancer. Ca 19-9 is the most prominently related. Ca 19-9 values were found to be significant in predicting response to treatment. It has

been stated that Ca 19-9 is also effective in evaluating the response to treatment. It was determined that the average survival time of 424 patients with a diagnosis of pancreatic cancer who underwent surgical resection was 2.3 years for those with a Ca 19-9 value below 1000 before the operation, while the average survival time was 1.0 years for those with more than 1000.[37] It has been found that there is a correlation between serum Ca 19-9 level and survival in patients receiving chemotherapy for pancreatic cancer. The serum tumour marker Ca 19-9 may be a useful prognostic factor for patients with advanced pancreatic cancer. Ca 19-9 can be used to predict tumour progression and survival. In a retrospective study by Boeck et al., it was found that Ca 19-9 had an effect on baseline values and values after CT or CRT, as well as progression-free survival and overall survival. They emphasized that Ca 19-9 is useful in determining progression-free survival and survival.[38] Patients with normal Ca 19-9 values at the time of diagnosis have a better prognosis than patients with high Ca 19-9 values.[39] One of the determinants studied to determine the response to treatment in pancreatic cancer is CEA. Other tumour markers such as CEA, Ca 125, pancreatic oncofetal antigen, ribonuclease, and elastase have not been shown to be useful in early diagnosis and follow-up.[19] However, in the study conducted by Tsavaris et al., it was determined that as the tumour mass increased, the CEA value also increased and was associated with a poor prognosis. CEA value was 5 mg/dl. It was determined that those who were above the age of six had a 1.4 times higher risk of death than those who were below the age of six.[40]

Conclusion

When the progression-free survival and overall survival times were evaluated according to tumour localization in our study; Survival times of those with head localized tumours are longer than those with trunk and tail localized tumours. When the progression-free survival and overall survival times are evaluated according to the stages; In terms of survival time, progression-free and overall survival times of patients with stage 2 cancers were found to be significantly longer when compared to patients with other stages. In our study, when the progression-free survival and overall survival times were evaluated according to the presence of chemotherapy, it was found that the progression-free survival and overall survival times in patients who received chemotherapy were statistically significantly longer in patients who received adjuvant chemotherapy at all stages, and in patients who were inoperable but did not receive chemotherapy. A statistically significant increase in Ca 19-9 and CEA values from diagnosis to the last visit was observed.

Disclosures

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

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