

Research Article

Epidemiological Properties and The Role of Imaging of Pancreatic Carcinoma

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Abstract: Pancreatic cancer is the fourth leading cause of cancer deaths, being responsible for 7% of all cancer-related deaths in both men and women. The aim is to present cases diagnosed with pancreatic carcinoma in UCCK, according to epidemiological variables: age, gender, age group, morbidity, mortality, life expectancy, risk factors and the role of imaging in the diagnosis of pancreatic carcinoma. There are 97 patients included in this retrospective study that were diagnosed with the abovementioned disease in UCCK. The imaging studies were done using ECHO Phillips, 6 and 64 MSCT Siemens and 1.5 T MR Symphony Siemens. The diagnostic apparatuses were sited at the Clinic of Radiology in UCCK Prishtina, and are using anamnesis the life of the Institute of Oncology protocols data from NIPH of Kosova and Kosovo Statistical Agency. In our study results were taken 97 patients diagnosed for the first time in the Radiology Clinic - University Clinical Centre in Pristina, 2011- 2014, and have proved these results as follows: age group has been affected with 61 to 70 years old with 40 cases or (41.2%) in both sexes with no significant change but less presented to age over 80 years old of both sexes with 2 cases or (2.1%). dominates males in the ratio 2: 1. The average morbidity rate for the period 2011-2014 is (0.3: 100,000). Moratilitetit rate average for the period 2011-2014 was 5.0: 100,000 residents. Patients who still live from the moment of diagnosis were 6 cases or (6.2%) of them still live. Risk factors present in our study have koreluar with Diabetes Mellitus type II 14:43%, 8.2% gastric ulcer, and smoking 34.0%, 21.6% consuming alcohol. Anatomic localization based on 76 cases (79.4%), resulting in head and neck, 20 cases (21%) in the body and tail, 1 case of pancreatic metastasis from colon carcinoma. The discussion and conclusion was tekonic advanced imaging methods make much easier to detect, diagnose staging and management type in patients with pancreatic carcinoma. Correlation risk factor of pancreatic carcinoma is closely related according to numerous studies, in those who had more impact with risk factors, they are two times more likely in the appearance of pancreatic carcinoma.

Keywords: Pancreatic cancer, localization, morbidity, mortality, risk factor, MSCT, MRI, University Clinical Center of Kosova, Prishtine, Kosova.

INTRODUCTION

Pancreatic cancer is the fourth leading cause of cancer deaths, being responsible for 7% of all deaths from cancer in both genders. Pancreatic cancer is the 10th most common malignancy and the 4th largest cancer killer in adults [1]. The accurate characterization of pancreatic neoplasm is very important for patient's management, CT and MRI have been become the most

important modalities for evaluating pancreatic lesions. Precise diagnosis of pancreatic neoplasm is not always straight forward because they frequently show atypical imaging features and many other diseases may mimic pancreatic adenocarcinoma [2, 3]. Invades 9 by 100,000 people every year in the US and is one of the most deadly forms of cancer. It is estimated that this year will be diagnosed 45,000 new cases of this disease

in the US. Pancreatic cancer is the fourth leading cause of cancer-related death in Kosovo. Pancreatic neoplasm have always been associated with a poor prognosis due to the late presentation, and hence, advanced stage of the disease at moment of the established diagnosis. Although this trend is gradually on the decline with the awareness of the existence of these disease, better radiologic imaging modalities for diagnosis in our country, diagnosis of this disease is still made in late stages and prognosis of disease is poor [4].

Pancreatic cancer remains one of the deadliest cancers worldwide, and has a poor, five-year survival rate of 5%. Although complete surgical resection is the only curative therapy for pancreatic cancer, less than 20% of newly-diagnosed patients undergo surgical resection with a curative intent. Due to the lack of early symptoms and the tendency of pancreatic adenocarcinoma to invade adjacent structures or to metastasize at an early stage, many patients with pancreatic cancer already have advanced disease at the time of their diagnosis and, therefore, there is a high mortality rate [5].

The estimated lifetime risk of developing pancreatic cancer is about 1 in 71 (1.41%) [6]. The disease is rare before age 45 but incidence rises rapidly after that and peaks in the seventh decade of life. The major risk factors include smoking [7], hereditary predisposition to pancreatic cancer itself or to multiple cancers [8] and to a lesser degree, chronic pancreatitis [9]. Pancreatic cancer does not exhibit early symptoms and initial symptoms are often nonspecific. Classical presentation of pancreatic cancer is present in only 13-18% of the patients and is often accompanied by purities, acholic stools, dark urine and weight loss [10]. Abdominal pain is present in 80-85% of patients with locally advanced or advanced disease. Acute pancreatitis and new onset diabetes mellitus can often be the initial presentations of PC [11, 12].

In up to 75% of the cases, the tumor is located within pancreatic head mostly sparing the uncinate process. Tumors in the pancreatic head often present early with biliary obstruction. However, tumors in the body and tail can remain asymptomatic till late in disease stage. Imaging techniques currently used for diagnosis and preoperative staging of pancreatic cancer include abdominal ultrasound (US), contrast-enhanced computed tomography (CT), magnetic resonance imaging (MRI), MR cholangiopancreatography (MRCP) and invasive imaging modalities like endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasound (EUS).

With the continuing substantial improvements in CT technology, the capacity of MDCT for the detection, diagnosis, and local staging of pancreatic

cancer has increased. MDCT is very effective for detecting and staging adenocarcinoma, with a sensitivity of up to 90% for detection and an accuracy of 80%-90% for staging [13, 14]. Determination of the extent of vascular involvement is usually made by identifying the extent to which the tumor involves the cross-sectional circumference of a vessel.

Pancreatic tumors that originate primarily in the pancreas can be epithelial or nonepithelial, can arise in the exocrine or endocrine pancreas, can appear cystic or solid, or can be secondary. The triple role of MRI in evaluating pancreatic neoplasms is tumor detection, characterization, and staging.

The aim of the paper

To present cases diagnosed with pancreatic carcinoma in UCCK, according to epidemiological variables: age, gender, age group, morbidity, mortality, life expectancy, risk factors and the role of imaging in the diagnosis of pancreatic carcinoma.

MATERIAL AND METHODS

This retrospective research study includes 97 patients first time diagnosed with pancreatic cancer, examined in the period from 2011-2015 in the Clinic of Radiology at University Clinical Center of Kosovo. Only patients that were first time diagnosed with pancreatic neoplasm were included and evaluated in this research. Abdominal ultrasound, MSCT 64 slice Sensation and MSCT 6 slice Emotion were used for CT examination of patients. MRI images are obtained with MRI 1.5 T Symphony

To actualize this research, the descriptive component of epidemiological method is used from the retrospective aspect. The data from the Clinic of Radiology in UCCK have been used, in collaboration with the Institute of Oncology Clinic, Surgery Clinic and Gastroenterology Clinic including all cases of pancreas carcinoma as well as the data on malignancies in IPH and the Anamnesis of life was taken from the patients that were involved in the study, including family risk factors. For the analysis we have used data from protocols of Radiology Clinic at UCCK and medical reports of patients respectively anamnesis of life and family by correlating risk factors (diabetes mellitus type II, ulcer peptic, smoke use and alcohol) in patients diagnosed with carcinoma of the pancreas. The use of these imaging methods has been the accurate diagnosis of pancreatic carcinoma patients, but also to select the clinical and therapeutic management of these patients that participated in the study.

RESULTS

In this study we included only patient first time diagnosed with MSCT or MRI with PC at our institution. There were in total 97 cases. All patients

were diagnosed in University clinical center of Kosovo (UCCCK). As first diagnostic modality was Abdominal Ultrasound, MSCT in 100% (n=97), MSCT and MRI in

same patients 48.5 % (n=47). Out of 97 patients, 67% were males (n=65) and 33% (n=32) females (table.1)

Table 1: Age group/ gender

Age group	Gender		Total N (%)
	F	M	
<40	1	3	4 (4.1)
41-50	1	3	4 (4.1)
51-60	7	14	21 (21.6)
61-70	17	23	40 (41.2)
71-80	5	21	26 (26.8)
>80	1	1	2 (2.1)
Total N (%)	32 (33.0)	65 (67.0)	97 (100.0)

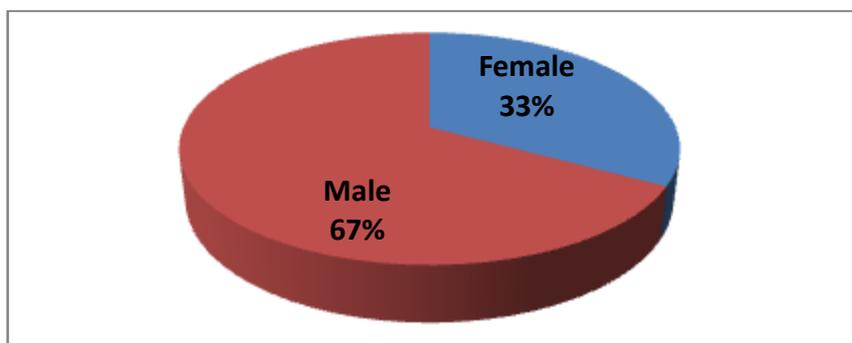


Fig-1a: The graphical presentation of pancreatic carcinoma cases by gender

The male gender domination over female gender in ratio 2: 1, Patients who still live from the moment of diagnosis are 6 cases or (6.2%) of them still live. According to the morbidity rate of patients

diagnosed with pancreatic carcinoma per 100,000 inhabitants by the total number of inhabitants 1.820,631 are presented in this form:

Table.2: The morbidity rate of patients with pancreatic carcinoma

Years	Diagnosed with carcinoma of the pancreas	Morbidity (1:100000)
2011	1	0.1
2012	3	0.2
2013	1	0.1
2014	1	0.1
Total	6	0.3

From the total number of diagnosed patients with pancreatic carcinoma (still alive) the largest number of cases was recorded in 2012 with 3 cases and the morbidity rate (0.2: 100,000) The number lowest was recorded in the years 2011, 2012, 2014 with a case

each and morbidity rate (0.1: 100,000). Average number of the diagnosed with pancreatic carcinoma (still alive) for a year is 1.5. The average morbidity rate for the period 2011-2014 is (0.3: 100,000), (table.2).

Tab.3: The mortality rate of patients with pancreatic carcinoma

Years	The deceased	Mortality (1:100000)
2011	0	0
2012	26	1.4
2013	14	0.8
2014	51	2.8
Total	91	5

No residents: 1820.631

From the total number of cases of deaths from pancreatic carcinoma (91), the highest number of deaths was recorded in 2014 with 51 cases, while the lowest number was recorded in 2013 with 14 cases. In 2011 there wasn't any case of death registered. The average number of deaths per year is 22.7. From the total

number of cases of deaths from pancreatic carcinoma (91), the highest rate of mortality is registered in 2014 (2.8: 100,000 inhabitants), while the lowest rate was recorded in 2013 (0.8: 100,000). The average mortality rate for the period 2011-2014 was 5.0: 100,000 inhabitants. (Table. 3).

Table 4: The life expectancy of patients diagnosed with pancreatic carcinoma by gender

The life expectancy			Total N (%)
Months	Female	Male	
2	1	2	3 (3.1)
3	4	4	8 (8.2)
4	3	9	12 (12.4)
5	4	8	12 (12.4)
6	6	15	21 (21.6)
7	3	4	7 (7.2)
8	4	8	12 (12.4)
9	0	5	5 (5.2)
10	0	2	2(2.1)
11	2	0	2 (2.1)
13	0	1	1 (1.0)
14	1	0	1 (1.0)
16	1	0	1 (1.0)
20	0	1	1 (1.0)
24	1	0	1 (1.0)
28	0	1	1 (1.0)
30	1	0	1 (1.0)
still lives	1	5	6 (6.2)
Total N (%)	32 (33.0)	65 (67.0)	97 (100.0)

From the total number of cases with pancreatic carcinoma (97), the highest number according to life expectancy expressed in months was recorded at life expectancy up to 6 months with 21 cases or 21.6%, the

lowest number was recorded at life expectancy of 13 months - 30 months with 1 case each, while still living patients are a total of 6 cases or 6.2%. (table.4 dhe graf.1).

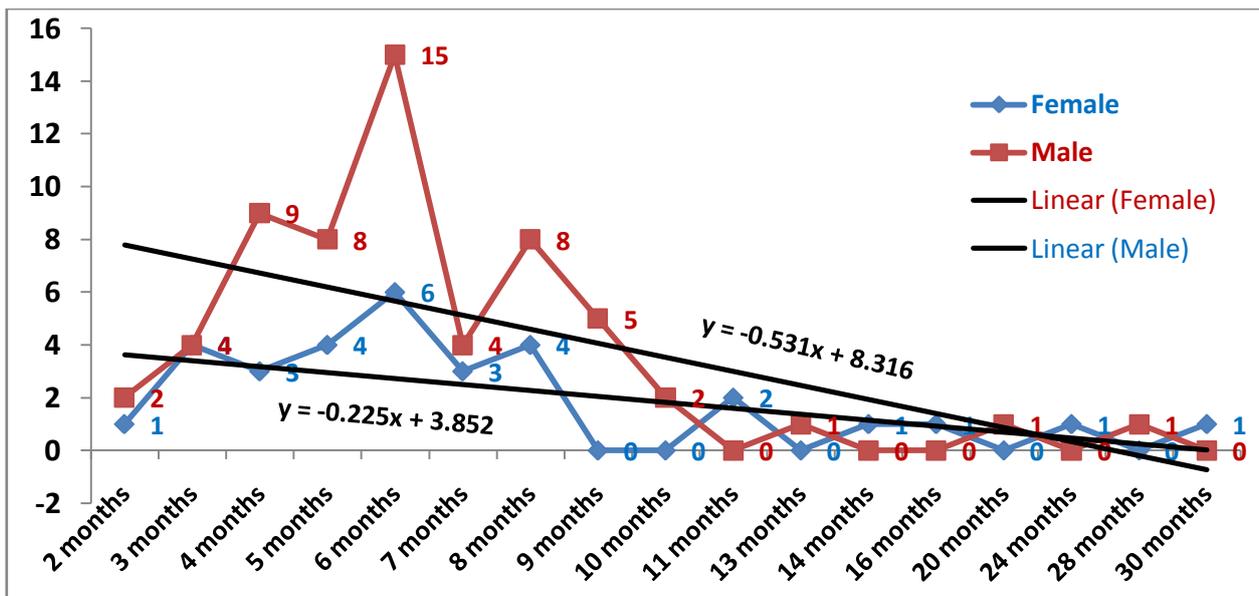


Fig-2: Linear trend progress of lifespan of patients diagnosed with pancreatic carcinoma by months

Linear trend progress of lifespan of patients diagnosed with pancreatic carcinoma by months is variable with a decrease tendency for both sexes. With the increasing of months the life expectancy of patients

diagnosed with pancreatic carcinoma for both sexes gradually begins to drop (shortened life expectancy). (graf.1)

Table 4: Correlation of risk factors and the incidence of carcinoma of the pancreas

Correlation of risk factors and the incidence of carcinoma of the pancreas													Total N (%)
Age-gander	>40		41-50		51-60		61-70		71-80		>80		
Gender	f	m	f	m	f	m	f	m	f	m	f	m	
D.M tip II	0	0	1	0	2	2	5	2	0	2	0	0	14(14.43)
Ulcera peptica	0	0	0	0	1	1	3	2	0	1	0	0	8(8.2)
Tobacco	1	1	1	0	7	5	3	12	0	3	0	0	33(34.0)
Alcohol	0	1	0	1	0	6	0	11	0	2	0	0	21(21.6)
Other	0	1	0	2	0	0	5	0	5	11	1	1	21(21.6%)
Total N (%)	1(1.03)	3(3.09)	1(1.03)	3(3.09)	7(7.22)	14(14.43)	17(17.53)	23(23.71)	5(5.15)	21(21.65)	1(1.03)	1(1.03)	97(100.0)

Correlations with risk factors present in our study have correlated with type II Diabetes Mellitus 14.43%, 8.2% gastric ulcer, smokers 34.0%, 21.6% alcohol consumers (Table.4) Based on localization the largest number is presented on the head neck with 76 cases or (78.4%) and body - tail with 20 cases or (20.6%) and 1 case of metastasis in the pancreas (1.0%) and that based on the clinical record where the head

neck localization occurs quicker due to earlier symptoms even though when it occurs, it has the size that is not resectable and does not change the longevity of those patients. Localization tail body is lower compared to developed countries because many patients die undiagnosed or at very late stages that have short lifespan of 2 months

Table- 5: Localization of pancreatic carcinoma

Head and neck	Body and tail	Meta in pancreas	Total
78.4% (n=76)	20.6% (n=20)	1.0% (n=1)	100% (n=97)

Out of 97 recently diagnosed pancreatic cancers, in 78.4% (n=76) cases is presented in head or

neck of pancreas, 20.6% (n=20) cases in body and tail and 1 % (n=1). Table.5

Table-6: Local imaging appearance of pancreatic carcinoma

Local imaging appearance			Total
Cystic	Solid	Solid with component cysticonecrotike	
41.2% (n=40)	25.8% (n=25)	33 % (n=32)	100% (n=97)

In most cases imaging presentation of tumors was with cystic component, 41.2 % (n=40), solid

component, 25.8 % (n=25), and solid with component cystic – necrotic 33 % (n=32).Table. 6.

Table-7: Size of pancreatic carcinoma in diagnosis

Size	
<2cm	> 2cm
11 % (n=11)	89 % (n=86)

Tumor size in time of examination of patients was <2 cm in 11% (n=11), 89% (n=86) was greater than

2 cm. Table 7.

Table 5: Distant metastases of pancreatic carcinoma

Pancreatic carcinoma body and tail with meta in hepar	19.6 % (n=19)
Pancreatic carcinoma head and neck with meta in hepar	10.3% (n=10)
Other	70.1% (n=68)

Table.6. Distant metastasis (lung and liver)

Pancreatic carcinoma body and tail with meta in hepar and pulmo	3.1% (n=3)
Pancreatic carcinoma head and neck with meta in hepar and pulmo	2.1% (n=2)
Other	94.8% (n=92)

Table.7. Presence of peritoneal carcinomatosis

Pancreatic carcinoma body and tail with meta in hepar with peritoneal carcinomatosis	5.2% (n=5)
Pancreatic carcinoma head and neck with meta in hepar with peritoneal carcinomatosis	2.1% (n=2)
Other	92.8% (n=90)

Liver metastases are found in 30 % of patients (n=29). Lung metastasis with or without hilar lymphadenopathy was found in 5% (n=5), peritoneal carcinomatosis was found in 7% (n=7), and in adrenal metastatic was found 1% (n=1) , regional lymph node involvement in 85.6% (n=83) of total n=97 cases. Table. 5.6.7. With ductus pancreaticus dilatation was found dilated in 42.3% (n=41), atrophy of body and tail was found in 26.8% (n=26), biliary obstruction with biliary tree dilatation was presented 35.1 % (n=34).

Most of local infiltration was presented as duodenal (ampular) infiltration, 35% (n=34) patients. In 15.5% (n=15) of patients was found gastric infiltration, in 2 cases 2.1 % (n=2) spleen infiltration and in 43 cases 44.3 % (n=43) local mesenteric infiltration.

Images of pancreatic carcinoma obtained in Our Institution (MRI and MSCT)

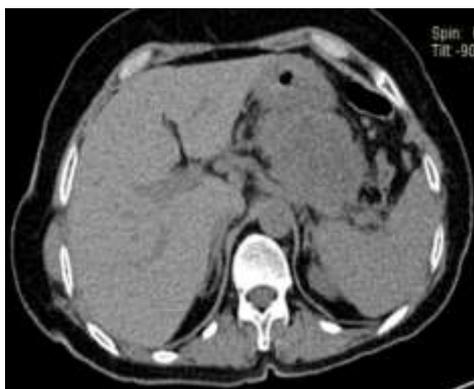


Fig.1a: NCE MSCT scan of pancreas: Axial plane, Expansive process of tail and body of pancreas solid mass with cystic-necrotic component.

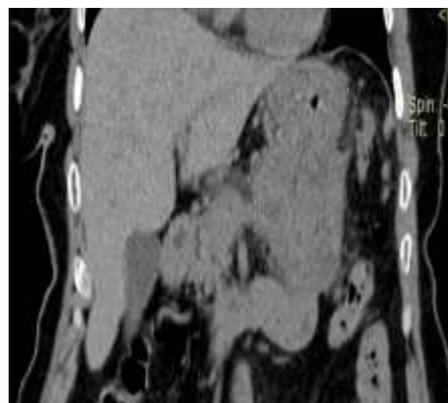


Fig.1b. NCE MSCT scan of pancreas: Coronal plane. Expansive process of tail and body of pancreas solid mass with cystic-necrotic component



Fig.2a: CE MSCT of upper abdomen: Axial plane: Pancreas body neoplasm with local infiltration of adjacent blood vessel and distant metastases (liver).



Fig.2b. CE MSCT of upper abdomen: Coronal plane: Pancreas body neoplasm with local infiltration of adjacent blood vessel and distant metastases (liver), Cystic and necrotic mass.

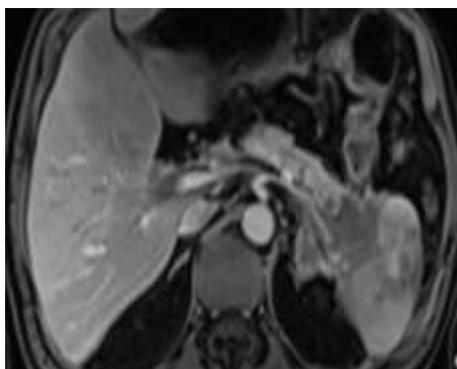


Fig.3: CE MRI of upper abdomen: Axial plane: Pancreas tail neoplasm with infiltration of spleen and liver metastases.



Fig.4: CE MRI of upper abdomen: Axial plane: Pancreas head and neck neoplasm with local infiltration of adjacent blood vessel and infiltration in duodenum. Cystic component.

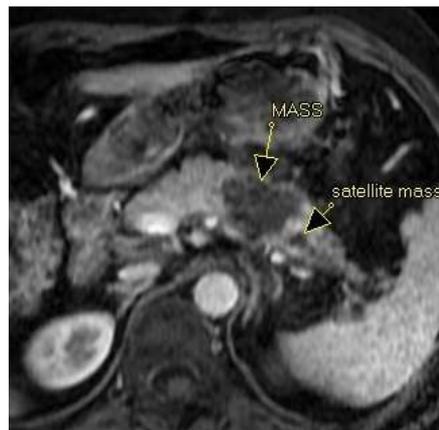


Fig.5: CE MRI of upper abdomen: Axial plane: Pancreas tail neoplasm with satellite mass in pancreas

DISCUSSIONS

Carcinoma of the pancreas is still the cause of the IV of both gender deaths, although the advancement of imaging methods has grown evidently and the development of surgical methods is in progress, and methods of chemotherapy and radiotherapy are most advanced methods, still the longevity of patients affected by carcinoma of the pancreas has not changed from 2 months to 5 years maximum [14].

The incidence of pancreatic carcinoma in Kosovo is growing, but according to the data in the whole world it is reaching the incidence of developed countries. This is explained by the use of advanced imaging modalities in routine examinations of patients who have complaints that go in favor of pancreatic disease.

According to our studies, the ratio M / F is 2: 1 (65/32) that is different from similar studies conducted in European countries (the ratio M / F 1.6: 1) [15]. The obtained results in the Balkan countries are roughly the same as in European countries, the ratio (M / F 1.5: 1) [16] whereas statistics in the UK resulted to be inverse (M / F 1: 1.3 [17]

It is worth mentioning that the number of patients in our study was 97 out of a total number in Kosovo during the period 2011-2014 were 289 patients, reviewed in the first comprehensive statistical group (the ratio in this group was M / F is 1.7: 1). According to data obtained in Statistics Agency of Kosovo and the National Institute of Public Health, and protocols of patients at the Oncology Institute at UCK.

According to age groups, statistics show that the most affected age group is 61-70 years old. From the general no. of patients (97), the highest number of cases was recorded in the age groups 61-70 years old with 40 cases or 41.2%, whilst the lowest number was registered at age groups over 80 years with 2 cases or

2.1%. According to gender, male gender dominates in the age group 61-70 years to that of female 61-70 years in ratio 2: 1. Male gender dominates over female gender in the ratio 2: 1.

From this retrospective study it is concluded that the number of patients in Kosovo diagnosed with cancer of pancreas with localization in the body and tail is very small, 20 cases (20.6%) compared to those localized in the head and neck of the pancreas that were 76 cases (78.4) and 1 case or 1.0% of them had metastasis in the pancreas.

According to world statistics 75% of the PC result in head and neck, which correlates with our study due to earlier symptomatology, while in the body 15-20% and tail 5-10% which compared to our study has significant difference up to 10% [18].

These statistics result lower than the percentage of cases in developed countries. These figures are a reflection of the lack of a national strategy to fight cancer of the pancreas in Kosovo, lack of public basic health insurance and late symptomatology, and non-specific symptoms of this type of cancer. All these circumstances are considered to be factors that limit the complete examination of a certain number of patients ranging from clinical examination up to the imaging one, surgical conservative treatment and also finalized with histological examination. Based on these arguments, the figures do not say that patients in this geographical area have less predispositions for cancer.

The using of advanced technological methods makes the diagnosis easier: MSCT is golden method for diagnosis, management and staging of patients diagnosed with pancreatic carcinoma. RM helps to verify cystic tumor, peripancreatic tissues, millimetric distal metastasis. MRCP enables intraductal tumor diagnosis and differentiation of the focal chronic pancreatitis as a still problematic diagnosis.

The exposure to the other risk factors (alcohol, diabetes mellitus tip II, high caloric diet etc) during the last period is increased among Kosova's population (according to recent epidemiologic studies). As results, there is increased number of different diseases in Kosova, still counting the cardio-vascular disturbances as a main cause of death followed by neoplastic malignant diseases.

The number of people addicted to nicotine in Kosovo is much higher than in other countries (especially compared to Western European countries). But this fact does not imply a higher incidence of pancreatic cancers / newly discovered in Kosovo and the known risk factor can not be treated as the main

cause of the disease in our study. Rather, unlike nicotine addiction, alcohol consumption in Kosovo is lower than in developed European countries and still has not reduced the number of incidences of pancreatic carcinoma that is growing. Tip II Diabetes mellitus is observed in our study as a risk factor, and based on the statistics of other countries, and correlates with our European statistics [20.21].

Genetic factor - as the most important in relation to the incidence of pancreatic cancer it has not been studied adequately in Kosovo due to the lack of modern laboratories and public health institutions that collect and analyze information in this particular field of medicine. Another (rare these days in Europe) more serious risk factor, is the impact of high-level radioactive uranium that was part of the bombing that was used during the bombings of NATO in Kosovo during 1999-2000. There is still no serious and comprehensive medical study about this issue due to various military and institutional limits. As a result, there is an increasing number of different diseases in Kosovo, still counting cardiovascular disturbances as a major cause of death, followed by malignant neoplastic diseases. (According to IPH and Kosovo Statistical Agency). Given the high mortality rate of the CC, the most important part of the strategy aims to understand the importance of the right cause of the disease, risk factors, respectively, and if it is possible to reduce exposure to these factors. High priority should be given to efforts to check the use of tobacco and alcohol. Carcinogenic substances resulting from tobacco smoke can reach the pancreas through the bloodstream after absorption from the lungs or upper respiratory tract. In addition, there is a possibility that ingested tobacco products reach the pancreas directly after reflux in pancreatic ductal system, reflux in pancreatic ductal system of the duodenum. If this kind of exposure is correct, this may partly explain the large number of PRs happening in the head of the pancreas. Almost all reports published show that exposure to tobacco products increases the risk of pancreatic cancer, usually the risk is two times higher compared to non-smokers. [22. 23].

Pancreatic carcinoma is considered to be the fourth etiological factor of death caused by gastrointestinal disease in both gender groups 61 -70 age group (ratio M: F has rezultu 2: 1 ratio compared to other countries M: F 1.3: 1) [24.25]. In this study the trend of mortality of patients diagnosed with CC in UCC during 2011-2014 and the results show an increasing trend for both sexes and age groups for CC in Kosovo during the period of 2011-2014 showed the total rate to 5.0 per 100,000 residents presenting in detail the years: in 2011 the mortality rate resulted 0.0: 100,000 in 2012, the mortality rate 1.4: 100,000 inhabitants, in 2013 the mortality rate showed 0.8:

100,000 and in 2014 mortality rate resulted 2.8 per 100,000 resident.

Similar studies were done in different countries and the highest mortality rate in men was reported in Hungaria – 11.56 per 100.000, followed by Armenia 10.81, Albania 10.7, Croatia 9.47 Rusia 8.83, Findland 7.14 per 100.000 and Cezh Republic 7.13.

The lowest mortality rates were found in Cyprus and Turkey, both in men (3.69 – 3.72 per 100.000) respectively women (2.43 and 2.49 per 100.000). Compared with the other European countries and USA with higher incidence frequency, the mortality rate registered in Kosova during 2011- 2014 was 0.8-2.8 in 100.000 residents. But compared to American countries where mortality from pancreatic carcinoma is growing where in 2003 it was 5: 100,000 in 2003 reached 10, 100,000 and in 2014 planned 39,590 patients diagnosed with CC who will die after the deadly disease [26] although the diagnostic also therapeutic improvement, in recent decades have not affected the survival rate of pancreatic cancer. International differences in scale of mortality and time trends suggest that the etiology of carcinoma of the pancreas is influenced by environmental factors, especially smoking, but also by nutritional and dietary factors, obesity, alcohol use, diabetes mellitus type II and peptic ulcer. [27].

CONCLUSION

Based on contemporary literature and our clinical materials in UCCK in Pristina we can come to these conclusions; the most affected age group was 61-70 years old with 40 cases or (41.2%) in both sexes by not having significant change but being less present to age over 80 years old, both sexes of 2 cases (2.1%). Carcinoma of the pancreas is resulting in increased rate of morbidity and mortality; Correlation of risk factors with carcinoma of the pancreas are closely related to each other and according to numerous studies, the population that had the most impact of risk factors, are two times more at risk in the appearance of pancreatic carcinoma; MSCT is still as "Gold" method together with Angio MSCT (by not using the Conventional Angiography as invasive method for visualization of blood vessels) did hold up the diagnosis of carcinoma of the pancreas also in smaller proportions, did the staging and the visualization of blood vessels, peripancreatic region, distant metastasis, increased metastatic lymph nodes, costs cheap, carried out fast, but only to patients sensitive to iodine preparations and those more milimetrik lymph nodes under 1cm which is the criterion size.

RM provides peripancreatic soft tissue visualization, detects tumors with cystic components,

makes detection of millimetric lymph glands suspicious for metastasis, detects millimetric peritoneal metastases under 1 cm. RM has triple role in the evaluation of whether it is the epithelial tissue or non-epithelial, or endocrine or exocrine tumors and measures whether it has cystic component, solid or mixed; MRCP detects intraductal tumors and visualization of bile ducts, and for diagnosis between pancreatic carcinoma with chronic pancreatitis as ongoing. Reduced exposure of risk factors would be the preferred strategy that will probably impact in reducing the number of new cases.

Systematic control of patients with a high degree of risk for the appearance of the pancreatic carcinoma, in order for the lifespan of the ill patients on pancreatic carcinoma to be maximal up to 5 years, early detection in the initial stages - resectable. This is directly connected with the health education based on the fact that early and accurate diagnosis by using appropriate methods for diagnosis and histopathology verification improves longevity.

The idea is that through health education and the controlling of systemic risk groups, according to our data but also to those issued internationally to be informed about the advantages of treatment and improvement of life which is already short, of patients diagnosed with pancreatic carcinoma from 2 months to those diagnosed in the fourth stage compared to those in the first stage which is up to 5 years to those who were diagnosed on time.

The use of MSCT with pancreas protocol on arterial and venous phase with contrast is the "Gold" method that enabled the diagnosis of pancreatic carcinoma, invasion of blood vessels, distant metastasis enlarged lymph nodes. Staging is made and based on estimation of radiologists continues the management and treatment depending on staging.

An additional recommendation is for RM to be used only when it is necessary in cases of cystic tumors, peripancreatic soft tissue visualization, lymph nodes that are millimetric and may be metastatic, millimetric metastases in the liver. MRCP for intraductal changes, bile roads and differential diagnosis of chronic pancreatitis.

For a carcinoma of the pancreas to be diagnosed on time and life expectancy of the patient to be improved by contemporary standards, there must be cooperation between the professional and trained team (Radiologist, Biochemist, Surgeon, Gastroenterologist and Oncologist) that will enable earlier diagnosis with less professional errors and with more efficient treatment.

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