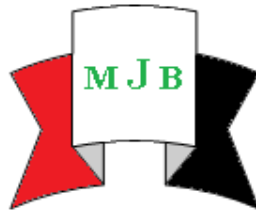


Carcinoma of The Pancreas A Retrospective Study of Pancreatic Cancer of 320 Case from 1976 to 2011

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Abstract

The objective of this study is to review the cancer of pancreas of 320 cases from 1976-2011, regarding age, gender, smoking, drinking alcohol, jaundice with recent diabetes mellitus.

Five hundreds seventy two patients were diagnosed to have pancreatic cancer based on clinical, radiological and histopathological criteria during the period 1976-2011 in Al-Mustinsirrhia Private Hospital and Baghdad Teaching Hospital. Only 320 patients have completed their information.

Regarding age:

peak below age of 50year, 63, 19.7%

50-59 years (106) 33%

60-69 years (101) 31%

70+ years (50) 15.6%

Range: 16-90 years

Mean: 57.4 years

Gender: males (224) 70%; females (96) 30%; M/F = 2.3-1

Being smoker: negative (229) 71.6%; positive (91) 28.4%

Drinking alcohol: negative (305) 95.3%; positive (15) 4.7%

Diabetes mellitus: negative (232) 72.5%; positive (88) 27.5%

Jaundice: (188) 58.8%

Carcinoma of pancreas is not uncommon disease in our country, it rise sharply in the last twenty years ,it is an aggressive and lethal disease. It affects all age groups mostly middle and old age groups , also it affect both male and female but it more common in male .Smoking and diabetes are risk factors .

Early diagnosis, accurate preoperative staging and better adjuvant treatment remain a challenge.

Keywords: Carcinoma of pancreas, age, gender, smoking, diabetes jaundice.

سرطان البنكرياس

دراسة ارتجاعية لسرطان البنكرياس لـ ٣٢٠ حالة من سنة ١٩٧٦ - ٢٠١١ نظرة شاملة

الخلاصة

ان الغاية من هذه الدراسة هو تقييم سرطان البنكرياس في العراق وتشمل العمر ,الجنس,البشرة,تناول الكحول ,يرقان مع داء السكر الحديث خمسمائة واثنان وسبعون مريضاً شخصت اصابتهم بسرطان البنكرياس اعتماداً على الميزات السريرية,نتائج فحص الاشعاع والتحليل النسيجي من الفترة ١٩٧٦ لغاية ٢٠١١ في مستشفى المستنصرية الاهلي ومستشفى بغداد التعليمي .

ثلاث مئة وعشرون مريضاً فقط كانت معلوماتهم وافية ,بينما مئتان واثنان وخمسون حالة اهملوا بسبب عدم كفاية معلوماتهم .

النتائج :

بالنسبة للعمر ,اعلى نسبة للعمر كانت ما بين ٥٠ - ٥٩ سنة كانوا (١٠٦) , ٣٣% .

ما بين ٦٠ - ٦٩ سنة كانوا (١٠١) , ٣١% .

٧٠ سنة فما فوق كانوا (٥٠) ١٥.٦ % .

يتراوح العمر ما بين ١٦ - ٩٠ سنة .

معدل العمر ٥٧.٤ سنة .

الذكور كانوا (٢٢٤) ٧٠% , الاناث (٩٦) ٣٠% , نسبة الذكور الاناث ٢.٣ - ١ .

العرب كانوا (٢٩٣) ٩١.٦ % بينما الكرد (٢٧) ٨.٤ % .

المدخنين كانوا (٩١) ٢٨.٤ % , غيرالمدخنين (٢٢٩) ٧١.٦ % .

شاربي الكحول (١٥) ٤.٧ % بينما غير الكحوليين (٣٠٥) ٩٥.٣ % .

داء السكر كان موجودا في (٨٨) ٢.٥ % وغير موجود في (٢٣٢) ٧٢.٥ % .

يرقان ظاهرا في (١٨٨) ٥٨.٨ % .

الاستنتاج : بالرغم من قلة حدوثه مقارنة مع الا ورام الاخرى ,ورم البنكرياس هو السبب الرابع المؤ دي الى الوفاة للاورام بالنسبة للرجال والنساء,التشخيص المبكر ,التقييم الصحيح ما قبل العملية مع ادوية كيميائية متزامنة ممتازة تبقى عملية تحدى .

Introduction

Cancer of pancreas is the second most common gastro intestinal malignancy, each year about 32,000 individual in united state and more than 60,000 in Europe were diagnosed with this condition.⁽¹⁾

About 95% of pancreatic tumor are adeno carcinoma, the remaining 5% includes other tumor of exocrine pancreas e.g. serous cyst adenoma, acinar cell cancer and endocrine pancreas tumor such as insulinoma, these tumors have a completely different diagnostic and therapeutic profile and generally more favorable prognosis.⁽²⁾

Predisposing factors includes :

- Age
- Male gender
- Smoking
- Diet high in meat, fat animal, low in fruit and fibers.
- Obesity.
- Diabetes mellitus.
- Occupational exposure to certain pesticides, dyes, and chemicals.
- Family history.
- Alcohol..
- *Helicobacter Pylori* infection, Cag A strain.
- Chronic pancreatitis has been likned but is not known to be a causal.
- Unknown.
-

Signs and symptoms:

Signs and symptoms of pancreatic cancer are so non-specific and variable making early diagnosis is difficult. Common symptoms includes: abdominal pain, loss of appetite, significant loss of weigh and painless jaundice. All of these symptoms can be blamed on other causes, therefore; diagnosis of cancer of pancreas is often late stage in its development. Jaundice occurs when the tumor grows and pressure obstructs the common bile duct which run partially through the head of the pancreas so tumors of the head of pancreas (approximately 60% of cases) will more easily give rise to such symptoms.

Carcinoma of pancreas can occasionally result in diabetes mellitus, insulin production is hampered and it has been suggested that the cancer can also prompt the onset of diabetes mellitus and vice versa⁽³⁾.

Treatment:

It depends on the stage of the tumor, recent advances have made resection (surgical removal) possible.

5-flouro-uracil, Gemcitabine and Erlotinib are the chemotherapeutics agents of choice ,that can be used with or without radiotherapy,⁽⁴⁾.

Prognosis:

It is generally poor, median survival from diagnosis is around 3-6 months, 5-year survival is less than 5%, mortality approach 99% which is the highest fatality

rate of all cancers and the fourth cancer killers among men and women in the United States after lung, colorectal and breast cancers.(5)

Prevention:

Prevention consists of avoiding the risk factors when possible, cigarette smoking is considered to be the most significant and avoidable risk factors, maintaining healthy weight and exercising may be helpful, increasing the consumption of fruit vegetables, and whole grains while decreasing red meat intake is recommended.(5-6).

Aim of the study

The aim of the study was to analyze the data (patient age ,gender, smoking ,alcohol consumption, the clinical presentation, the surgery performed& followup) of 320 patients that has been gathered over a period of 35 years.

Patient and Methods

This is retrospective study representing a clinical experience at Medical city and

AL-Mustansyria private hospital during the period 1976-2011.

This study includes 572 patients, only 320 patients who have completed their information were diagnosed to have pancreatic cancer based on clinical presentation, radiology, and histopathological study.

The remaining 258 patients were excluded because of their incomplete information.

The age, gender, smoker, alcohol consumption, clinical presentations, duration of complaint, the radiological study, site of tumor, surgery performed to the patient, histopathological result, receiving chemotherapy and their follow up.

Results

Age range was (16-90)years ,mean 57.4 years , 20 (6.3%) of patient below age of 40 years, 43 (13.4%) where 40-49 years old , the most common age is between 50-59 years 106 (33.1%) , followed by the age between 60-69 years 101 (31.6%) and above age of 70 years is 50 (15.6%), as shown in table -1 below.

1. Age groups (years)	Number	percentage
<40	20	6.3
40-49	43	13.4
50-59	106	33.1
60-69	101	31.6
70+	50	15.6
Total	320	100

Table 1: percentage of patients with pancreatic cancer according to age,

Regarding gender : Male formed 224 (70%& female in 96 (30%) of the studied patients, as shown in table 2.

Gender	Number	Percentage
Female	96	30
Male	224	70
Total	320	100
Male : female ratio	2.3 : 1	
P (χ^2) = 0.20 ^{/NS/}		

Table 2:Gender.

Smoking: Most our patients are not smokers 299 (71.6%), while they are smokers in 91 (8.4%). As shown in table no 3.

3. Being a smoker		
Negative	229	71.6
Positive	91	28.4
P (χ^2) = 0.04		

Table3:the effect of smooking on the diagnosis of pancreatic tumors.

Alcohol consumption:most our patients are non alcohol consumers, 305(95.3%) , while they are consumers in minority 15 (4.7%) . table - 4 .

4. Drink Alcohol		
Negative	305	95.3
Positive	15	4.7
Total	320	100
P (χ^2) = 0.97 ^{/NS/}		

Table -.4 :Drinking alcohol Clinical features:

Most patients had weight loss 256 (80%) , jaundice had been found in 188(58.8%) of the patients, abdominal pain in 175 (54.7%). palpable gall bladder 44.7%(143) , back ache 31.6%(101) ,diabetes mellitus 27.5% (88),enlarge palpable liver on examination 25.6% (82), palpable

abdominal mass 23.4% (75), gastric outlet obstruction 14.4% (46) ,cholangitis 4.7%(15) ,pancreatitis 3.4%(11), Other rare presentations like ascites 1.9% (6) and hematemesis and melena 1.9%(6). As shown below ;

	P (χ^2)	Overall (n=320)	
Clinical features		N	%
Weight loss	<0.001	256	80
Jaundice	0.49 ^{/NS/}	188	58.8
Pain	0.96 ^{/NS/}	175	54.7
Palpable gall bladder	0.42 ^{/NS/}	143	44.7
Backache	0.19 ^{/NS/}	101	31.6
Diabetes Mellitus	0.92 ^{/NS/}	88	27.

	/		5
Enlarged palpable liver	0.66 ^{NS} /	82	25. 6
Palpable Mass	0.64 ^{NS} /	75	23. 4
Gastric outlet obstruction (identified by Barium meal or OGD)	0.57 ^{NS} /	46	14. 4
Cholangitis	0.33 ^{NS} /	15	4.7
Pancreatitis	0.14 ^{NS} /	11	3.4
Ascites	0.65 ^{NS} /	6	1.9
Hematemesis and Melena	0.58 ^{NS} /	6	1.9

Table 5: Clinical presentation of patients

Duration of symptoms:

Duration of symptoms before visiting the doctor ranged (0.2 – 48.4 months), mean (2.7) months, more than half patients are complaints within one month of

duration 173 (54.6%), between 2 -3 months 90 (28.4%) , between 4-12 months 44 (13.9%). After one year 10 (3.2%). As shown in table - 6 below;

	Number	percentage
Duration of complaint		
Within 1 month	173	54.6
2-3 months	90	28.4
4-12 months	44	13.9
>1 year	10	3.2
Total	317	100

Table 6: Duration of complaint in months , majority are within first few months and rarely before one year.

Radiological studt:

Gall bladder was distended or contained stones by ultra sound 167 (68.5%), and was normal in 96 (36.5%), common bile duct contained stones, or was dilated on ultra sound in 193 (72,3%) and was normal in 74 (28.7%).pancreatic mass was found on ultrasound in 165 (62.3%)

and was not found 1n 100 (37.7%), liver secondary were found on ultrasound in 82 (31.9%) and was not found in 175(68.1%), in table 7.

Ultrasound and . if, performed barium meal findings of the patient had been studied.

	N	%
Positive gall-bladder U/S finding		
Negative	96	36.5
Positive	167	63.5
Total	263	100
Positive Common bile duct-U/S finding		
Negative	74	27.7
Positive	193	72.3
Total	267	100
Positive pancreatic mass-U/S finding		
Negative	100	37.7
Positive	165	62.3
Total	265	100
Positive hepatic secondaries-US finding		
Negative	175	68.1
Positive	82	31.9
Total	257	100

Table-7: Ultrasound and barium meal findings;

Site of tumor :

During surgery ;The most common site of tumor was in the head of pancreas 200 (63.7%), followed by body 76(24.2%),

peri ampullary region35 (11.1%). In the neck is 2 (0.6%) and in the tail 1 0.3%). As shown below; table 8.

Site of pancreatic mass		
Head of pancreas	200	63. %
Neck	2	0.6 %
Body	76	24.2 %
Tail	1	0.3%
Peri-ampullary	35	11.1 %
Total	314	100 %

$$P(\chi^2) = 0.04$$

Table-8: The site of tumor at the time of surgery,

Surgical procedures :

Chledocho-duodenostomy+gastro-jejunostomy+biopsy (CD+GJ+BX) is the most common palliative bypass procedure 175 (55.6%), ,followed by biopsy (BX) if wide spread metastasis by either excisional or fine needle aspiration cytology 73 (23.2%) , gastro-jejunostomy(GJ) for

gastric outlet obstruction in 30(9.5%) , excision of tumor in form of curative procedure for local periampullary and distal pancreatectomy for distal tumor in 28(8.9%) & choledocho-duodenostomy(CD) for biliary obstruction in 9 (2.9%). As shown in table 9.

Type of surgical procedure	N	%
CD + GJ + Bx	175	55.6%
Bx	73	23.2%
CD	9	2.9%
Excision	28	8.9%
GJ	30	9.5%
Total	320	100%
Liver secondaries identified at operation in one or both lobes .		
Total	320	100 %
Other secondaries identified at surgery i.e omentum.		
Negative	202	63.5%
Positive	118	36.5%
Total	320	100%

Table 9 :type of surgery performed to the patients.

Chemo therapy :

5- Flurouracil for positive histopathology has been used in 164(

55%) and has not been used in negative histopathology 134 (45%). table- 10.

Chemotherapy used	N	%
Negative	134	45% &
Positive	164	55 %
Total	298	100 %

Table 10: the use of chemotherapy.

Histopathological study:

Moderately differentiated adenocarcinoma was the most common type 46.8%(131), followed by poorly

differentiated in 69 (24.6 %), miscellaneous in 38 (13.6%), well differentiated in 33 (11.8%) and lastly anaplastic type in 9 (3.2%). Table 11.

	N	%
Histological Grade of pancreatic cancer		
Well differentiated	33	11.8
Moderately differentiated	131	46.8
Poorly differentiated	69	24.6
Anaplastic	9	3.2
Miscellaneous,ie lymphoma...	38	13.6
Total	280	100

Table 11:Tumor type and differntiation

Follow up; After follow up for tow years ; five patients were died within thirty days post operatively 5 (1.6%), most patient are well 155 (48.4%) during this period , while no follow up is available in 117 (36.6%), and a new symptoms developed in

43 (13.4%),in form of secondary in 88 (27.9%), pain ,backache in 58 (18.6%), ascites & edema in18.6%,jaundice in 50 (16.3%) mass in 20 (7%) debilitated in 15 (4.7%), hematemesis & melena in 15 (4.7%) and DVT in 7 (2.3) table - 12.

Last clinical status recorded	N	%
Death	5	1.6
Well	155	48.4
New symptoms	43	13.4
No follow up available	117	36.6
total	320	100

Table 12: two years follow up

Discussion

Cancer of pancreas is the second most common malignancy after rectal cancer of gastro intestinal malignancy and it is the commonest cancer referring to gastrointestinal teaching hospital.(1)

It affect all age groups ranging from (16-90) years. About 29 (6.3%) of patients are below age of 40, peak incidence between (50-59) years about 166 (33%), followed by age of (60-69) years about 101 (31%), with mean age of (57.4) years. As 1n table -1In most series, it is very rare below age of (45) years, and the peak incidence is reported between 50-70 years^(7, 8, 9, 10).

Male is affected in 224 (70%), female in 96 (30%), M/F: 2.3:1 . See table-2 ,while in other studies it is either 1.3:1 or 1:1^(11, 12).

91 (28.4%) were smokers, while229 (71.6 %) were not smokers P(x): 0.04 which is significant ,see table 3, and it is similar to the study of Cuschieri A ,et al .which shows 30% are smokers, 36% unknown, 20% diet, 10% are hereditary, 4% were benign causes⁽¹¹⁾.

15 (4.7%)of the patient consumpt alcohol while 305 (95.3%) did not.; P(x): 0.97 which is not significant, see table-4, and in the study of Mack TM, et al .is inconclusive⁽¹²⁾.

Diabetes mellitus was present in 88 (27.5%) of cases, table-5, while in the study of Permert J, et al . it varies between 6-68%. Most cases have been diagnosed within preceding two years with no family history of diabetes particularly in patient older than 50 years.Destruction of pancreas is unlikely to be sufficient to cause endocrine insufficiency; it has been proposed that higher production of islet amyloid polypeptide (amylin) by the tumor is responsible for diabeto-genic state; in fact glucose tolerance test is frequently improved in patientwho have undergone surgery^(9, 13).

The most prominent clinical features were weight loss 256 (80%), jaundice 188 (58.8%), and pain175 (54.7%) , table-5.Most patients experience symptoms late, the lack of early symptomatology lead to delay in the diagnosis and less than 28(20%) presented with resectable disease⁽¹⁴⁾.Tumor of the head of pancreas produce symptoms earlier in the course of the disease, in the contrast tumor in the distal gland characterized by their silent presentation with physical findings appearing only after widely metastasis⁽¹⁵⁾. Jaundice is often the first sign that bring patient to medical attention especially with tumor in the head of

pancreas, present more than 179 (50%) due to obstruction of extra hepatic CBD. This is similar to study of Bakkevoid KE, Kambestad B. ⁽¹⁶⁾. Pain is primarily due to invasion of celiac and superior mesenteric plexus, it is of low intensity, dull, vaguely localized to upper abdomen. In advanced case pain may be localized to middle and upper back, and treated by systemic analgesia & or nerve block by alcohol, some times combined with local anesthesia, other common symptoms are weight loss, anorexia and fatigue may or may not be associated with luminal obstruction resulting from tumor involvement of duodenum.(16).

Palpable gall bladder is present in 134 (44%) , table-5. Cuschieri A ,Steel RJ ,Moossa AR : studies less than one third have palpable non tender gall bladder referred to Courvoisier s sign. (17)

Acute pancreatitis is occasionally the first manifestation of carcinoma of pancreas in 11 (less than 5%); a fact must be kept in mind when dealing with an elderly patient who has acute pancreatitis with no obvious cause. This is similar to Mujica VR, et al.(18)

Hematemesis and melena may occur in late cases (1.9%) as a result of direct invasion of duodenum, or gastric mucosa by tumor or superior mesenteric- splenic vein compression by the tumor , like the result of Solcia E, Capello,Kloppel G.(19)

The liver is usually large on palpation in 25.6% of cases ⁽¹⁹⁾ . This is in constant to Kloppel G ,et al. (20)

Regarding duration of symptoms: 54.6% within one month, 28.4% between 2-3 months and 13.9% more than 4-12 months, it ranges from 0.2-48.4 months. Mean is 2.7 months, this is consist with other study of Permet J, et al. &Basso D , et al. ^(20, 21) .As in table-6.

Regarding radiological study; ultrasound has been used in this study, it is positive for gall bladder stones or inflammation in 176 (63.5%) and negative in 96 (36.5%);

positive for CBD stones or dilatation in 193 (72.3%) and negative in 74 (27.7%);positive for pancreatic mass in 165 (62.3%) while negative in 100 (37.7%);positive for hepatic secondary in 82 (31.9%) and negative in 175 (68.1%), table-7 and some times barium meal has been used in cases of gastric outlet obstruction .While in other studies like Coley SC, et al . ultrasound can detect pancreatic mass in up to 50% of jaundiced patient, but in large series of Freeny SC, et al .a correct diagnosis of ca pancreas can be made in up to 97% by spiral CT scan ⁽²²⁾.

Site of tumor: the head was the commonest site accounting for 63.7%; followed by body (about 24.2%); peri-ampullary in 11.1%; neck 0.6% and tail 0.3%, $P(x) : 0.04$ which is significant,as in table-8, the same result with Megibow AJ,et al. which account 60-70 % for head and peri-ampullary region; while 5-10% in the body; and 10-15% in the tail ^(18, 24) .

Regarding surgical procedures:

CD+GJ+BX(CHLEDOCHO-DUODENOSTOMY+GASRTO-JEJUNOSTOMY +BIOPSY) are common palliative surgical procedures done in about 175 (55.6%);to relieve both biliary &gastric outlet obstruction

BX (BIOBSY) is done in 73 (23.2%);if wide spread metastasis or carcinomatosis in form of either excisional , incisional or fine needle aspiration cytology in form of.GJ (GASTRO JEJUNOSTOMY) has been done in 30 (9.5%); as apalliative procedure for gastric outlet obstruction .

EXCISION has been done in 28 (8.9%) of cases as acurative surgical procedures for localized peri ampullary (ampullectomy) & distal pancreatic lesions (distal pancreatctomy) . and lastly

CD (choledochoduodenostomy) has been done in 9 (2.9%) as a palliative procedure to relieve biliary obstruction . table-9. All of these procedures except excision were palliative, in studies of Singh SM ,et al. 5-22% of cases were

resectable, the remaining majority requires some form of palliation for relieve of jaundice, eg ;either by cholecysto-jejunostomy or choledoch-jejunostomy, duodenal obstruction or pain by systemic analgesia .

Endoscopic stent placement has success rate of more than 85% with 1-2% mortality rate of procedures ^(30, 31) in developed countries. Several randomized trials as in Andersen JR et al ,have found no difference in survival between endoscopic stent placement and surgical bypass for malignant obstruction ^(32, 33, 34) .

Histopathological results are of three groups:

- No malignancy in (17) cases 5.4% probably due to sample errors or the tumor sample is too small.
- Other pathology like lymphoma, endocrine tumors ...in (22) cases 7%.
- Carcinoma of pancreas in (275) cases 87.5%.

Histological grading is as follow:

- Well differentiation in 33(11.8%).
- Moderately differentiation 131 (46.8 %)
- Poorly differentiation in 69 (24.6%).
- Anaplastic differentiation in 9 (3.2%).
- Miscellaneous tumor in 38 (13.6%).

In Kleppel G, et al. study more than 95% of malignant neoplasm arise from exocrine element, only 1-2% are endocrine, non epithelial malignancy are exceedingly rare. Microscopically; ductal adeno-carcinoma are graded as: well, moderately, or poor. Well differentiated tumor shows irregular tubular neoplastic glands with mild cellular atypia, low mitotic activity and significant mucin production. Loss of differentiation results from lack of cellular arrangement into glandular structures, increase in cellular atypia and mitotic figures, and cessation of mucin production. Some studies have

demonstrated that histological grading correlates with survival ⁽³⁵⁾ .

Chemotherapy:

164 (55%) patients receive chemotherapy in form of 5-flouro-uracil in 55% for six months duration, while did not 134 (45%) , table-10, because either sample error or patient in cooperation, in other study of Backkerold KE, et al. the median survival in treated group was 20 months nine months longer than untreated group; however, a separate study showed similar result and supported a survival benefit for adjuvant therapy ⁽³⁶⁾ .

Follow up:

The duration of post operation follow up was two years.

Mortality: 5 (1.6%), within thirty days post operative.

Well : 155 (48.4%).

No follow up: 117 (36.6%).

New symptoms develop in 43 (13.4%) during follow up, in form of secondary in 74 (27.9%), pain and backache in 52 (18.6%) and treated by systemic analgesia or nerve block , ascites and edema in 48 (16.86%), jaundice in 46 (16.3%), mass in 8 (7%), haematemesis and melaena in 6 (4.7%), debilitated in 6 (4.7%) and deep veins thrombosis.

Median survival time (free of new symptoms) is 32 months.

In the studies of Sohn TA, et al. and Geer RJ, et al, despite current efforts, pancreatic cancer remains an aggressive and lethal disease. Less than 5% of patients diagnosed with cancer of pancreas can be expected to survive 5 year. Even after potentially curative surgery in cases selected appropriately, 5-years actuarial survival rate ranging from 10.5-25% and median survival rate from 10.5-20 months ^(37, 38, 39) .Mortality rate is less than 3% with concomitantly lower rate of complications. Analysis of 5-year survival demonstrates an actual 5-year survival rate of approximately 10% ⁽⁴⁰⁾ . Better outcomes are if tumor size is less 3 cm, absence of lymph node metastasis, negative surgical margins, well-

differentiated tumors and intra-operative blood loss less than 750 ml^(41, 42, 43).

Conclusion

Cancer of pancreas is not uncommon disease in our country, it is incidence has increase sharply in the last twenty years ,it is an aggressive and lethal disease. It affects all age groups mostly middle and old age groups , also it affect both sexes but it more common in males ..

The etiology remain unknown , but there are several risk factors includes : smoking, diet rich in red meat, animal fat, recent diabetes, obesity, jaundice especially with diabetes mellitus and positive family of cancer

Weight loss , jaundice and abdominal pain are the most common presentations within last few months of the disease. .

Early diagnosis ,accurate preoperative staging and better adjuvant treatment remain a challenge.

Ultra sound can detect pancreatic mass ,common bile duct dilatation in about two third of patients .

Pancreatic head is the most common site , followed by body , peri ampullary , neck and lastly tail .

Moderately , poorly differentiated adenocarcinoma are the most common histopathological results .

Bypass procedures with or without biopsy are the most common procedures while excision of tumor have been done in less than ten percent.

In spite of radical and palliative treatment, it carries a poor prognosis.

Recommendations

Prevention is better than control, so quit smoking, cessation of red meat and animal fat, encouragement of vegetables and fruits and early detection of tumor by education of patients regarding early complaints ,full examination ,high index of suspicion and radiological studies includes spiral CT scan offer the best treatment.

References

1. Jamal A, Tiwari RC, Murray T et al: Cancer statistics 2004, CA cancer J Clin, 2004; 54: 8.
2. Ries LAG, Eisner MP, Kosary CL et al. Seer Cancer statistics Review, 1973 - 1996. Bethesda MD. National Cancer Institute 2003.
3. Lowenfals AB, Maissoneuve P, DI Magna EP et al: Hereditary pcreatitis and the risk of pancreatic cancer. J Nat. Cancer Inst. 1997, 89: 442.
4. Lowenfals AB, Maissoneuve P, Cavallini G et al: Pancreatitis and the risk of pancreatic cancer. N Engl. J Med; 1993, 28: 1433.
5. Lynch HT, Fusaro RM. Pacreatic cancer and the familial atypical multiple mole melanoma. Pancreas, 1991; 6: 127.
6. Hruban RT, Petresen GM, Goggins M et al. Familial pancreatic cancer. Ann Oncol. 1999; 10 (4): 69.
7. Giardello FM, Bernsinger JD, Tesmeethe AC et al. Very high risk in familial Peutz-Jegher's syndrome. Gasrtoentrology, 2000; 119: 1447.
8. Fuchs CS, Colditz GA, Stampfer MJ et al. A prospective study of cigarette smoking and the risk of pancreatic cancer, Arch Intrn Med,1996; 156: 2255.
9. Permert J, Larson J, Westermarck GT et al. Islet amyloid poly-peptide in patient with pancreatic cancer with diabetes, N Engl. J Med, 1994; 330: 313.
10. DiMagno EP, Reber HA, Tempero MA. AGA technical review on the epidemiology, diagnosis & treatment of pancreatic ductal adenocarcinoma, Gastroenreology, 1999; 117: 1464.
11. Cuschieri A, Steel RJ, Moossa AR: Essential surgical practice; Disorders of pancreas, 2002; 2: 503.
12. Mack TM, Yu MC, Hanisch R, Henderson BE. Pancreas cancer and smoking, beverage consumption and past medical history. J Nati Cancer Inst, 1986; 76: 49.
13. Gullo L, Pezilli R, Morselli-Labate AM. Diabetes & the risk of pancreatic cancer. Italian Pancreatic

- Cancer Study Group, N Engl. J Med, 1994; 331: 81.
14. Ghodirion P, Simard A, Baillargeon J. Tobacco, alcohol & coffee and cancer of pancreas. Cancer, 1991; 67: 2664.
15. Sohn TA, Lillemoe KD, Cameron JL et al. Surgical palliation of unresectable peri-ampullary adenocarcinoma in the 1990 s, J Am Coll Surg, 1999; 188: 658.
16. Bakkevoid KE, Kambestad B. Carcinoma of pancreas and papilla of vater: Presenting symptoms, sign & diagnosis related to stage and tumor site, Seand J Gasroentrol, 1992; 27: 317.
17. Mujica VR, Barkin JS, Go VLW. Acute pancreatitis secondary to pancreatic carcinoma. Study Group Participants, Pancreas, 2000; 21: 329.
18. Solcia E, Capello, Kloppel G. Tumors of exocrine pancreas, Washington, DC, Armed Forces Institute of pathology, 1997; 145.
19. Kloppel G, Solcia E, Langnecker DS et al. Histological typing of tumors of exocrine pancreas. In international Histological classification of tumors. Berlin, Springer- Verlag, 1996.
20. Permet J, Ihse J, Jarfeldt et al. Pancreatic cancer is associated with impaired glucose metabolism, Eur Surg. 1993; 159: 101.
21. Basso D, Plebani M. Fogar J et al. B – cell function in pancreatic adenocarcinoma, Pacreas, 1994; 3: 332.
22. Coley SC, Strickland NH, Walker JD, Williams RC. Spiral CT % the preoperative assessment of pancreatic adenocarcinoma, Clin Radiol., 1997; 52: 24.
23. Freeny SC, Traverso W, Ryan JA. Diagnosis & staging of pancreatic adenocarcinoma with dynamic CT, Am J Surg, 1993; 165: 600.
24. Megibow AJ, Zhou XH, Rotterdam H et al. Pancreatic adenocarcinoma, versus MR imaging in evaluation of respectability. Report of radiology Diagnosis Oncology Group. Radiology, 1995; 195: 327.
25. Rosenberg JM, Welch JP, Macualay WP. Cancer of pancreas: An institutional review with emphasis on surgical therapy, J Surg oncol, 1985; 28: 217.
26. Connolly MM, Dawson PJ, Michelassi F et al. Survival in 1001 patients with carcinoma of pancreas, Ann Surg, 1987; 206: 366.
27. Funovice JM, Karner J, Partschnw T et al. Current trends in the management of cancer of pancreatic head, Hepato gastro enterology, 1989; 36: 450.
28. Singh SM, Longmire WP Jr, Reber HA et al. Surgical palliation for pancreatic cancer: TheUCLA experience, Ann Surg., 1990; 212: 132.
29. Tsuchiya R, Noda T, Harda N et al. Collective review of small carcinoma of the pancreas, Ann Surg, 1986; 203: 77.
30. Huibrgtse K, Katon RM, Coene PP et al. Endoscopic palliative treatment in pancreatic cancer, Gasro intest Endosc, 1986; 32: 334.
31. Soehendra N, Grimm H, Berger B et al. Malignant jaundice: Result of diagnostic & therapeutic endoscopy, World J Surg, 1989; 13: 171.
32. Andersen JR, Sorensen SM, Kruse A et al. Randomized trial of endoscopic endoprosthesis versus operative bypass in malignant obstructive jaundice, GUT, 1989; 30: 1132.
33. Smith AC, Dowsett JF, Russell RC, et al. Randomized trial of endoscopic stenting versus surgical bypass in malignant low bile duct obstruction, Labcet, 1994; 344: 1655.
34. Speer AG, Cotton PB, Russell RC et al. Randomised trial of endoscopic versus percutaneous stent insertion in malignant obstructive jaundice, Lancet, 1987; 2: 57.
35. Kleppel G, Lingenthal G, Von Bulow M, Kern HF. Histological and fine structural features of pancreatic adenocarcinoma in relation to growth & prognosis: Studies in xenografted tumors and clinico–histopathological correlation in series of 75 cases, Histopathology, 1985; 9: 842.

36. Bakkerold KE, Arnesjo B, Dahl O et al. Adjuvant combination chemotherapy (AMF) following radical resection of CA pancreas& ampulla of vater, Result of a controlled prospective randomized multicentre, Eur J Cancer, 1993; 29 A: 698.
37. Sohn TA, Yeo CJ, Cameron JL et al. Resected adenocarcinoma of pancreas 616 patients: Results, Outcomes & Prognostic indicators, J Gastrointest Surg, 2000; 4: 567.
38. Geer RJ, Brennan MF. Prognostic indicators for survival after resection of pancreatic adenocarcinoma. Am J Surg, 1993; 165: 68.
39. Millikan KW, Dezeil DJ, Silverstein JC et al. Prognostic factors associated with respectable adenocarcinoma of the head of pancreas. Ann Surg, 1999; 65: 618.
40. Conlon KC, Klimstra DS, Brennan MF et al. Long term survival after curative resection for pancreatic ductal adenocarcinoma: clinico-pathologic analysis of 5 year survivors, Ann Surg, 1996; 223: 273.
41. Yeo CJ, Sohn TA, Cameron JL et al. Peri ampullary adenocarcinoma: Analysis of 5 year survivors, Ann Surg, 1998; 227: 821.
42. Kuhlmann KF, De Castro SM, Wesseling JG et al. Surgical treatment of pancreatic adenocarcinoma: Actual survival & prognostic factors in 343 patients, Eur J Cancer, 2004; 40: 549.
43. Meyer W, Jurowich C, Reichel M et al. Patho morphological and histological factors in curatively resected ductal adeno carcinoma of the pancreas, Surg Today, 2000; 30:582.