ORIGINAL ARTICLE

The most common clinical and paraclinical findings in pancreatic cancer at Taleghani Hospital: 2000-2006

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ABSTRACT

Aim: The aim of this study was to assay the most common signs, symptoms, and positive paraclinical findings in pancreatic cancer.

Background: It seems that the most available method for early diagnosis of pancreatic cancer is using clinical history and especially appearance of early signs and symptoms.

Patients and methods: In this descriptive study, all pancreatic cancer patients referred to Taleghani Hospital between 2000 and 2006 were included. Data were gathered from medical charts and entered to SPSS software.

Results: In total, 50 patients with pancreatic cancer (60% male and 40% female) during six years were included in the study. The most frequent age was the seventh decade (62%). The most common signs and symptoms were weight loss (82%), abdominal pain (78%), jaundice (74%), and itching (28%), respectively. The most important laboratory findings included anemia (58%), increased level of bilirubin (66%), and abnormal LFTs (70%). The ultrasound and CT scan findings had abnormalities in all cases (100%). The reports of ERCP had abnormalities in 79% of patients. There were no abnormal findings in 70% of endoscopic investigations.

Conclusion: In our study, the most common findings in signs and symptoms were weight loss, abdominal pain and jaundice, which mostly appear in advanced stage of pancreatic cancer. In addition, laboratory findings are usually nonspecific. The imaging evaluation of the pancreatic cancer is usually done in advanced stage of disease. Therefore, it is suggested to study populations, especially high-risk populations, for early signs and symptoms of pancreatic cancer for decreasing the mortality and increasing the survival of these patients.

Keywords: *Pancreatic cancer, Early diagnosis, Clinical findings, Paraclinical findings.*
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INTRODUCTION

Pancreatic cancer comprises only two percent of new cases of cancer in the US; however, it is the fourth cause of death from cancer in this country. Only eight percent of pancreatic cancers are localized at the time of diagnosis, and more than 50% of them are metastatic at this stage. In addition, the average survival time after diagnosis of this cancer is less than five months which has not increased over the last 25 years. As a matter of fact, fewer than four percent of patients survive more than five years. This cancer is correlated with ageing and it is seldom diagnosed before the age of 50 (1, 2). Smoking, diabetes and obesity are its known risk factors (3-5), and more than ten percent of patients are known to have the history of pancreatic cancer in their family (8). Some studies have determined that physical activities, fruits and vegetables, and probably NSAIDs can prevent the occurrence of pancreatic cancer (6, 7).

Clinical features of pancreatic cancer depend on location and the size of the tumor as well as existence of metastasis. As a matter of fact, non-specific and subtle symptoms of this cancer at its early stages lead to the delayed diagnosis of tumor at its final stages (9, 10). Early symptoms of the disease include flatulence, malaise, diarrhea, vomiting and constipation, which might be accompanied by weight loss and abdominal pain as the disease progresses (9, 12). Moreover, the pancreatic head is involved in more than two third of occasions, which might lead to biliary obstruction and subsequent jaundice in more than 80% of patients. Furthermore, the increased serum level of bilirubin may cause severe itching in these patients (9). The most common late symptom, however, is abdominal pain (80% of patients) radiating from the epigastric region to the back (13). In general, despite the technological developments, diagnosis of pancreatic cancer is usually delayed, so in comparison to other cancers, pancreatic cancer has a very poor diagnosis.

Surgical resection seems to be the most effective treatment modality for pancreatic tumors; however, it might be of little benefit when the disease is advanced. Thus, the only survival increasing solution seems to be the early diagnosis (11). At the present state of knowledge, it seems that the most available method for early diagnosis of pancreatic cancer is careful clinical history taking and vigilance of appearance of early symptoms of disease which might lead the patients to seek medical advice at the initial stages. Initial studies have found the correlation between occurrences of some events such as early onset of diabetes, weight loss, fatigue and malaise, and abdominal discomfort with pancreatic cancer; but neither the time of onset nor the signs and symptoms are specific (14, 15). The aim of this study was to assay the most common signs, symptoms, and positive paraclinical findings in pancreatic cancer.

PATIENTS and METHODS

In this descriptive study, all pancreatic cancer patients who were referred to Taleghani Hospital between 2000 and 2006 were included. The study protocol was approved by ethical committee of Shahid Beheshti Medical University. Data included demographic, clinical, and paraclinical information such as age, sex, signs and symptoms, laboratory findings, ultrasonography, computed tomography (CT) scan, endoscopic retrograde cholangiopancreatography (ERCP), and endoscopic reports. It merits mentioning that ultrasonography was performed on 45 participants; CT scan on 48, and 38 patients had undergone the ERCP. Data were gathered from medical charts and entered to SPSS v.12 software and proper descriptive tables were drawn.

RESULTS

Totally, 50 pancreatic cancer patients were included during six years, of whom 30 patients (60%) were male, 20 were female and more than 60% aged over 60 years (Table 1). The most common signs and symptoms were weight loss (41 cases; 82%), abdominal pain (39 cases; 78%), jaundice (37 cases; 74%), and itching (14 cases; 28%). Anemia was found in 29 patients (58%), increased serum level of bilirubin (>2mg/dL) in 33 (66%), and abnormal liver function tests (ALT>40U/L and ALP>15U/L) in 35 cases (70%). All of 45 ultrasound reports contained abnormal findings. The most frequent ultrasound findings were mass on pancreatic head (35 cases; 70%), dilation and irregularity of the biliary tract (30 cases; 66.6%) and border of pancreas (eight cases; 17.7%).

More over, CT scan was performed in 48 patients and all of them (100%) had abnormalities including dilation and irregularity in biliary tract (48 cases; 100%), mass in pancreatic head (40 cases; 83.3%), and irregularity of pancreatic border (10 cases;

20.8%). 35 out of 38 ERCP results had abnormalities in pancreatic ducts (92.1%) and the thin distal end of the common bile duct (28 cases; 73.6%). All of participants had undergone upper GI endoscopy which yielded no abnormal results in 70% of cases. Endoscopic abnormalities comprised peptic ulcer (ten cases; 20%) and external compression of the stomach (five cases; 10%).

Table 1. Age distribution of patients with pancreatic cancer

Age group (year)	No. (percent)
20-29	-
30-39	4 (8%)
40-49	7 (14%)
50-59	8 (16%)
60-69	15 (30%)
>70	16 (32%)
Total	50 (100%)

DISCUSSION

In the present study, pancreatic cancer was more frequent in males and over 60 years of age. Some other similar studies have stated the prevalence of pancreatic cancer to be slightly higher in men than women; besides, the highest prevalence has been reported in seventh and eighth decades of life (16). The most common clinical findings in our study were weight loss, abdominal pain and jaundice, which accord to other studies on pancreatic cancer (12), but as mentioned before, these symptoms happen late in the course of the disease. Gullo et al. (2001) investigated earlier findings other than pain or jaundice in pancreatic cancer patients for predicting the cancer and early diagnosis. They found that 49.5% of the 305 patients had some discomforts early before diagnosis, 35.4% had problems from six months to early before diagnosis which included pain and jaundice, and 14.1% of them had problems over six months later than the diagnosis. In the last group, 14 patients (4.6% of total) had problems such as anorexia, early satiety,

or asthenia (7-20 months before appearance of jaundice or abdominal pain), 11 patients (3.6% of total) had disgust for coffee and/or smoking and/or wine (7-20 months before), 14 patients had diabetes (7-24 months before), and four patients (1.3%) had acute pancreatitis (8-26 month before). Apart from acute pancreatitis, all the differences between patients and control group in this study were statistically significant (17).

There is a body of evidence demonstrating the abnormal laboratory findings to be almost non-specific in pancreatic cancer. For example, anemia can be just indicative of the chronic nature of cancer. Patients with obstructive jaundice would have elevated level of serum bilirubin, alkaline phosphatase (ALP), and gamma glutamyl transpeptidase (GGT), or liver metastasis can be associated with increased transaminase level (12).

Ultrasound is usually the first investigation method used after appearance of jaundice. It can provide information about size, location, characteristics of the tumor, the diameter of biliary and pancreatic ducts, and site of obstruction. In addition, it can determine the presence or absence of lymph nodes or hepatic metastatic disease and the proximity of tumor to major vessels in a non-invasive way (18). In our study, all ultrasound reports were abnormal. As a matter of fact, ultrasound results are operator dependent and can be inaccurate in one third of occasions because of obesity, ascites, or overlying bowel gas (19), but computed tomography (CT) scan can provide more detailed information; as a result, thin section (3-5 mm cuts), contrast enhanced, dual phase multidetector CT scan (MDCT) is the modality of choice for diagnosis and staging of the pancreatic cancer (20-22). The problem is that small hepatic or peri-portal metastases can still be missed. In our study all CT scan reports had abnormalities.

It merits to be considered that only one third of less than 2cm tumors and half of less than 3cm ones can be detected by CT. ERCP on the other

hand is believed to provide an accurate diagnosis of biliary and pancreatic cancers (23). 79% of participants of the present study had abnormal findings on ERCP and irregularity of the pancreatic ducts was the most frequent one.

Upper GI endoscopy can only identify some evidence of end stage tumors, which might justify the 70% of our normal upper GI endoscopies. In contrast, endoscopic ultrasonography, which is a new diagnostic method, represents the most sensitive technique for detection of pancreatic cancers. It can provide accurate images from pancreas. Studies indicate the more sensitivity and specificity of endoscopic ultrasonography over the CT scanning, especially in detection and evaluation of less than 3 cm tumors (24). Its sensitivity can reach 98% for detection of small tumors (25). The main disadvantage of this technique is its high cost. In addition, serum tumor-markers are not specific enough to be used for accurate diagnosis of pancreatic cancers; thus, despite their high cost, imaging modalities have remained the diagnostic method of choice in this regard (12).

Accurate clinical history taking and appropriate screening tests can facilitate the rapid diagnosis of pancreatic cancer. Members of families with history of pancreatic cancer, distinct hereditary cancer syndromes such as Peutz-Jeghers syndrome, hereditary pancreatitis, familial atypical multiple mole melanoma syndrome, hereditary breast and ovarian cancer syndrome and hereditary nonpolyposis colorectal cancer can be the candidates for screening tests (26, 27). In addition, several models have been suggested for early diagnosis of pancreatic cancer based on clinical and paraclinical findings, but there is not a unanimous consensus about them.

In summary, it merits mentioning that there is no accurate statistics on high risk populations or the prevalence of pancreatic cancer in Iran. We suggest epidemiologic studies to be carried out on high risk populations to find predicting factors as well as early diagnosis methods which might increase the survival time of this lethal disease.

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