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Original Article

Public Fear of Pancreatic Diseases: Causes and Clinical Outcomes at a Single Korean Center

Won Jae Yoon

Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea

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Corresponding Author
Won Jae Yoon
ORCID https://orcid.org/0000-0003-2292-1348
E-mail biliary@naver.com

Background/Aims: The public fear of pancreatic diseases including pancreatic cancer (PC) appears to be growing. The aims of this study were to evaluate the causes of fear of pancreatic diseases and assess clinical outcomes of such individuals.

Methods: This was a retrospective study of 249 individuals who visited the Pancreatobiliary Diseases Center at Ewha Womans University Seoul Hospital due to the fear of pancreatic diseases between January 2019 and August 2021. Those referred from other departments or external medical facilities were excluded. Collected data included demographic details, comorbidities, causes of fear of pancreatic diseases, and the presence of pancreatic lesions in imaging studies.

Results: The median age was 55 years (range, 22 to 82 years). One hundred eleven subjects (44.6%) were male. The causes of fear of pancreatic diseases were abdominal pain (n=144, 57.8%), back pain (n=114, 45.8%), body weight change (n=35, 14.1%), family history of pancreatic diseases (n=32, 12.9%), and others (n=39, 15.7%). Within the group with family history of pancreatic diseases, 25 subjects had a first-degree relative with PC. Of the 200 subjects who underwent imaging, there was no evidence of pancreatic diseases in 182 (91.0%). Pancreatic lesions identified were cystic lesions (n=15, 7.5%), non-specific calcification (n=1, 0.5%), lipoma (n=1, 0.5%), and solid tumor (n=1, 0.5%), later diagnosed as unresectable PC.

Conclusions: Abdominal pain and back pain were the major causes of fear of pancreatic diseases. The prevalence of PC among those who underwent imaging was 0.5%. Such characteristics should be considered when consulting individuals with fear of pancreatic diseases. **(Gut Liver 2024;18:756-760)**

Key Words: Pancreatic diseases; Fear; Pancreatic neoplasms

INTRODUCTION

Pancreatic cancer (PC) is one of the most dismal cancers. With an overall 5-year survival rate of around 10%, it is one of the leading causes of cancer-related deaths in the world.[1] As surgical resection is regarded as the only chance for cure, early detection is mandatory. However, due to the lack of typical clinical manifestations and effective diagnostic modalities, more than 80% of the patients are diagnosed at stages where resection is not possible.[2,3] Even after curative resection and adjuvant chemotherapy, it is estimated that most patients will survive less than 3 years.[4]

The incidence and mortality of PC have been reported to be increasing globally.[1] A similar trend was reported in Korea.[5] However, due to the relatively low incidence of PC, screening for PC in general population is not recommended.[3]

Over the years, the author has experienced a growing number of outpatients visiting the clinic due to the fear of pancreatic diseases. It seems that with easier access to information online, interest and fear about pancreatic diseases, most often PC, appears to be growing. The lack of specific symptoms and signs, effective screening methods, and the grave prognosis of PC seem to contribute to this fear. The aims of this study were to evaluate the causes of fear of pancreatic diseases in individuals who visited a gastroenterology clinic and to assess the clinical outcomes of these individuals.

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MATERIALS AND METHODS

1. Subjects and data collection

This was a retrospective study of individuals who visited the Pancreatobiliary Disease Center of the Division of Gastroenterology and Hepatology, Ewha Womans University Seoul Hospital, due to the fear of pancreatic diseases between January 2019 and August 2021. These individuals were included in the study, regardless of their symptoms or signs. To assess the cause of fear of pancreatic diseases in the general population, individuals referred by other departments or external medical facilities were excluded. Since this institution is a general hospital, no referral is necessary. During outpatient consultations, subjects who wanted imaging studies underwent the procedure only after a thorough discussion.

Collected data included demographic details, alcohol consumption, smoking habits, comorbidities, causes of fear of pancreatic diseases (allowing multiple responses), and the presence of pancreatic lesions in imaging studies. The data were retrieved from the electronic medical records.

2. Statistical analysis

Descriptive statistics were performed. Statistical analysis was performed using STATA 15.1 (StataCorp LP, College Station, TX, USA).

3. Ethical considerations

This study was conducted in compliance with the Ethical Principles for Medical Research Involving Human Subjects outlined in the Helsinki Declaration in 1975, which was revised in 2000. This study was approved by the Institutional Review Board of Ewha Womans University Seoul Hospital (IRB number: 2021-12-033). The need for written informed consent was waived due the retrospective nature of the study.

Table 1. Subject Characteristics

Characteristics	Value (n=249)
Age, yr	55 (22–82)
Sex	
Male	111 (44.6)
Female	138 (55.4)
Alcohol intake	
<2 times/wk	204 (81.9)
≥2 times/wk	45 (18.1)
Smoking	
Current smoker	28 (11.2)
Ex-smoker	22 (8.9)
Never smoker	199 (79.9)
Comorbidities	
Diabetes mellitus	37 (14.9)
Hypertension	62 (24.9)
Chronic liver disease	5 (2.0)

Data are presented as median (range) or number (%).

RESULTS

1. Subject characteristics

A cohort of 249 subjects was analyzed. The median age was 55 years (range, 22 to 82 years). One hundred eleven subjects (44.6%) were male. Forty-five subjects (18.1%) consumed alcohol at least twice a week, while the others drank less frequently. Twenty-eight subjects (11.2%) were current smokers, 22 (8.9%) were ex-smokers, and 199 (79.9%) had never smoked. Comorbidities included diabetes mellitus in 37 subjects (14.9%), hypertension in 62 (24.9%), and chronic liver disease in five (2.0%) (Table 1).

2. Causes of fear of pancreatic diseases

The reported causes of fear of pancreatic diseases were abdominal pain (n=144, 57.8%), back pain (n=114, 45.8%), body weight change (n=35, 14.1%), and family history of pancreatic diseases (n=32, 12.9%). Within the group with family history of pancreatic diseases, 25 subjects had a first-degree relative with PC, and five met the criteria of familial PC, defined as a kindred with at least two first-degree relatives with PC (Table 2).[6] Other causes of fear of pancreatic diseases (n=39, 15.7%) are listed in Supplementary Table 1. Of these, the most common cause was a non-relative acquaintance having pancreatic diseases (n=10, 4.0%), followed by history of pancreatitis of the subject (n=7, 2.8%). Six (2.4%) were related to diabetes mellitus.

3. Presence of pancreatic lesions in imaging studies

Two hundred subjects underwent imaging. The major causes of fear of pancreatic diseases among these subjects were abdominal pain (n=119, 59.5%), back pain (n=94, 47.0%), weight change (n=32, 16.0%), and family history of pancreatic diseases (n=27, 13.5%). The imaging modalities

Table 2. Causes of Fear of Pancreatic Diseases (Multiple Responses Allowed)

Variable	No. (%)
Abdominal pain	144 (57.8)
Back pain	114 (45.8)
Body weight change	35 (14.1)
Family history of pancreatic diseases	32 (12.9)
First-degree relative had pancreatic cancer	25 (10.0)
Non-first-degree relative had pancreatic cancer	6 (2.4)
Familial pancreatic cancer	5 (2.0)
Other causes*	39 (15.7)

*Other causes of fear of pancreatic diseases are listed in Supplementary Table 1.

Table 3. Results of Imaging Studies

Variable	No. (%)
No. of subjects who underwent imaging studies	200
Imaging modality	
Computed tomography	185 (92.5)
Magnetic resonance imaging	7 (3.5)
Abdominal ultrasonography	8 (4.0)
Pancreatic findings noted on imaging	
No evidence of pancreatic diseases	182 (91.0)
Cystic lesion	15 (7.5)
Calcification	1 (0.5)
Lipoma	1 (0.5)
Solid tumor	1 (0.5)
Risk categorization of imaging findings*	
Low- to intermediate-risk lesions	17 (8.5)
High-risk lesions	1 (0.5)

*Categorization according to Shah *et al.*[7]

Table 4. Characteristics of Pancreatic Cystic Lesions (n=15)

Characteristics	No. (%)
Lesion	
Single	12 (80.0)
Multiple	3 (20.0)
Location of single lesions	
Head	5 (41.7)
Neck	1 (8.3)
Body	1 (8.3)
Tail	5 (41.7)
Maximum diameter	
≤10 mm	12 (80.0)
15 mm	2 (13.3)
25 mm	1 (6.7)

were computed tomography in 185 subjects (92.5%), magnetic resonance imaging in seven (3.5%), and abdominal ultrasonography in eight (4.0%). There was no evidence of pancreatic diseases on imaging in 182 subjects (91.0%). Pancreatic cystic lesions were present in 15 subjects (7.5%). There was one case (0.5%) of non-specific pancreatic calcification, and one case (0.5%) of pancreatic lipoma. There was one case (0.5%) of solid pancreatic tumor (Table 3). Among the 15 subjects with pancreatic cystic lesions, 12 had a single lesion, while three had multiple lesions. The largest diameter of the pancreatic cystic lesions was 25 mm. Overall, there were no evidence of worrisome features or high-risk stigmata in these lesions (Table 4).

When the imaging findings were stratified according to the risk stratification suggested by Shah *et al.*,[7] only one case (0.5%) was a high-risk lesion, while the other 17 cases (8.5%) were either low- or intermediate-risk lesions (Table 3).

The subject with solid pancreatic tumor was a 71-year-old man who presented with abdominal pain and weight loss of 4 kg over the course of 1 month. He was a non-smoker who consumed alcohol once a week. He did not have a history of diabetes mellitus or a family history of pancreatic diseases. A mass measuring 6.3×3.7 cm in the pancreas body with vascular invasion and lymph node enlargement was detected on computed tomography. He was diagnosed with unresectable pancreatic ductal adenocarcinoma and died 2 years after the diagnosis.

DISCUSSION

In this study, a total of 249 subjects visited the clinic over a period of 32 months due to the fear of pancreatic diseases. Individuals referred by other medical personnel were excluded in order to more accurately assess the cause of fear of pancreatic diseases among the general population. The most common causes of this fear were abdominal pain and back pain. Patients as young as 22 years of age visited the clinic due to the fear of pancreatic diseases. Two hundred of these subjects underwent imaging, reflecting the magnitude of fear. Among the subjects who underwent imaging, pancreatic cystic lesions were detected in 15 subjects, and unresectable PC was detected in one subject. To the best of my knowledge, this topic has not been discussed in detail.

It is noteworthy that back pain was the second most common cause of fear of pancreatic diseases. Acute pancreatitis usually presents with abdominal pain often radiating to the back.[8] Back pain is one of the common manifestations of PC, usually indicating irresectability.[9] The knowledge of back pain being the symptom of pancreatic diseases seems to be widespread. Thus, one may develop fear of pancreatic diseases when having back pain. Consulting an individual whose chief complaint is back pain in a gastroenterology clinic may seem odd; however, the frequency of such consults is likely to increase over time.

Another common cause of the fear of pancreatic diseases was the history of pancreatic diseases of acquaintances. Thirty-two subjects stated that their fear was caused by family history of pancreatic diseases. Of these subjects, 25 had first-degree relative with PC, five meeting the criteria of familial PC. Although familial PC meets the eligibility criteria for pancreatic surveillance, those with only one first-degree relative affected with PC without other risk factors are not considered eligible for pancreatic surveillance.[3] This should be discussed when consulting such an individual. Interestingly, 10 subjects stated that history of a non-relative acquaintance having pancreatic diseases was the reason for the fear. One may assume that dismal disease course of pancreatic diseases may have had impact on

these individuals, even when the affected individual was not a relative.

The prevalence of pancreatic cystic lesions in the subgroup of subjects who underwent imaging was 7.5%. The prevalence of pancreatic cystic lesions in the general population is reported to be 4%–14% and increasing.[10] It is known that the prevalence of pancreatic cystic lesion varies widely with the type of imaging modality used, ranging from 0.21% for ultrasonography[11] to 2.6% for computed tomography[12] and 2.4% to 49.1% for magnetic resonance imaging with magnetic resonance cholangiopancreatography.[13-15] The prevalence of pancreatic cystic lesions observed in this study cohort aligns with those reported in prior studies. Interestingly, no worrisome features or high-risk stigmata were present. The symptoms of the subjects with pancreatic cystic lesions were less likely to be associated with the lesions.

There was one patient who was diagnosed with PC. This patient was at average risk of developing PC. As mentioned earlier, screening for PC in general population is not recommended. Indeed, the US Preventive Task Force has recommended against screening for PC in asymptomatic adults.[6] In this statement, asymptomatic persons who have factors such as new-onset or preexisting diabetes mellitus, older age, cigarette smoking, obesity, or a history of chronic pancreatitis are not recommended to be screened for PC. However, a significant number of subjects in this cohort exhibited symptoms, raising the question of whether further evaluation should be offered. Interestingly, Shah *et al.*[7] reported that of the 252 high-risk individuals of PC undergoing PC screening, two (0.8%) were diagnosed with PC. The frequency of PC was similar in this cohort, although the overall risk of PC was lower.

It should be noted that subjects as young as 22 years of age sought consultation due to the fear of pancreatic diseases. The sources of information leading to hospital visits were not investigated in this study. However, from the author's experience, a large number of subjects gained information online. Therefore, the quality of online information is crucial. However, recent evidence suggests that this standard is not always met. A recent study examining the quality of information on liver cancer on social media revealed that the quality of short videos on information related to liver cancer was poor.[16] Another study examining the quality of information on nonalcoholic fatty liver disease demonstrated similar results.[17] The providers of information on websites and social media vary from nonprofessionals to health professionals and medical institutions. One measure to reduce unnecessary public fear of pancreatic diseases would be for medical societies to provide high-quality information that is easily understandable.

This study has limitations. First, as this is a single center study with a small number of subjects seen by one physician, it inherently carries the risk of selection bias which may limit the generalizability of the results. Second, being a retrospective study without a predefined protocol, some crucial data, such as the source of medical information that caused the fear of pancreatic diseases, was not collected. Third, as no questionnaire was used in this study, it is possible that the researcher's subjectivity may have influenced the data collection process. However, all subjects stated that they visited the clinic due to the fear of pancreatic diseases, and a routine history taking and physical examination was always conducted, minimizing the influence of subjectivity. Fourth, most of the subjects who underwent imaging selected computed tomography. For management of patients with increased risk for familial PC, endoscopic ultrasound or magnetic resonance imaging with magnetic resonance cholangiopancreatography is recommended for pancreatic surveillance.[18] However, endoscopic ultrasound and magnetic resonance imaging are not covered by National Health Insurance in this setting and could not be recommended on general basis. Fifth, it is difficult to give any recommendation on how to manage the individuals with symptoms who have fear of pancreatic diseases based on the data of this study alone. However, to the best of the author's knowledge, this study is the first to explore the causes fear of pancreatic diseases, and gives some insight into this topic.

In conclusion, among the 249 subjects who were consulted for fear of pancreatic diseases, abdominal pain and back pain were the major causes of this fear. Two hundred of these subjects underwent imaging, reflecting the magnitude of their fear. The prevalences of pancreatic cystic lesions and PC were 7.5% and 0.5%, respectively. Such characteristics should be considered when consulting individuals with fear of pancreatic diseases.

CONFLICTS OF INTEREST

W.J.Y. is an editorial board member of the journal but was not involved in the peer reviewer selection, evaluation, or decision process of this article. The author declares no other financial or any potential personal conflicts of interest.

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AUTHOR CONTRIBUTIONS

All work was done by W.J.Y.

ORCID

Won Jae Yoon https://orcid.org/0000-0003-2292-1348

SUPPLEMENTARY MATERIALS

Supplementary materials can be accessed at https://doi.org/10.5009/gnl240241.

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