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QUALITY OF LIFE IN PATIENTS WITH CHRONIC PANCREATITIS

Gastroenterology

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ABSTRACT

Background and Aims: To compare the quality of life between patients with chronic pancreatitis and controls, and also correlating their quality of life scores with clinical, sociodemographic,and nutritional factors.

Methods: 100 outpatients diagnosed with chronic pancreatitis were assessed . The control group consisted of 100 healthy companions.Different degrees of CP activity were defined using the Cambridge classification. Quality of life was measured by the Brazilian version of the Short Form-36. Nutritional status was classified according to body mass index and triceps, biceps, suprailiac, and subscapular skinfold thicknesses, using the appropriate methods. The percentage of body fat was given by adding the four skinfold thicknesses. The statistical tests included the Chi-square, Mann-Whitney, and Spearman's correlation tests, with the significance level set at $p<0.05$.

Results: The socio demographic variables of the case and control groups did not differ. Quality of life was lower in chronic pancreatitis patients than in controls. Smoking duration, alcohol intake in grams, and time since pancreatic endotherapy correlated negatively with the quality of life of alcohol related chronic pancreatitis patients. Old age, skinfold thicknesses, and percentage of body fat correlated positively with quality of life.

Conclusion: Quality of life is low in chronic pancreatitis patients because of the negative influence of certain factors, such as smoking duration, amount of alcohol consumed, and time since pancreatic endotherapy.

KEYWORDS

Chronic Pancreatitis, Quality Of Life, Short Form-36

INTRODUCTION

Chronic pancreatitis is a syndrome involving progressive inflammatory changes in the pancreas that result in permanent structural damage, which can lead to impairment of exocrine and endocrine function[1]. The patient with chronic pancreatitis clinically presents with chronic abdominal pain and normal or mildly elevated pancreatic enzyme levels. When the pancreas loses its endocrine and exocrine function, the patient presents with diabetes mellitus and steatorrhea. The disease is caused mainly by chronic alcohol abuse[2]. Quality of life in these patients can be measured by specific questionnaires by using the Short Form-36 (SF-36), an instrument that measures quality of life[3,4]. About 85% of the patients with chronic pancreatitis, especially the younger patients have low Quality of life with social consequences[5-7]. Chronic pain is the main deteriorator of the quality of life of these patients[8]. Gastrointestinal, metabolic, and nutritional (low body mass index) factors also deteriorate quality of life[5,6,9]. This study aimed to compare quality of life between patients with chronic pancreatitis and healthy controls and then to correlate clinical, socio demographic, and nutritional factors with quality of life.

METHODS

This prospective, cross-sectional study was conducted from september 2018-september 2019. 100 outpatients diagnosed with chronic pancreatitis were assessed. The control group consisted of 100 healthy companions. The diagnosis of chronic pancreatitis was made by a combination of imaging, functional, pathologic and clinical findings. Quality of life was measured by the Brazilian version of the SF-36 questionnare[3,4]. The questionnaire consists of 11 questions and 36 items in eight domains, namely functional capacity, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health. The answers were tabulated and weighted according to specific formulas and values for each answer or domain, with scores that varied from 0 (worst) to 100 (best), according to the criteria proposed by Ware et al[3].Nutritional status was classified according to the Body Mass Index (BMI), given by dividing weight (kg) by height squared (m2). Nutritional status was classified according to the cut-off points for adults and older adults proposed by the World Health Organization[10]. The triceps, biceps, suprailiac, and subscapular skinfold thicknesses were measured in mm by the precision caliper Lange. The percentage of body fat was given by adding the four skinfold thicknesses (triceps skinfold thickness, biceps skinfold thickness, suprailiac skinfold thickness, and subscapular skinfold thickness) as proposed by Durnin & Womersley[11]. The quantitative variables were expressed as mean and standard deviation, and the categorical (qualitative) variables were expressed as absolute frequency and percentage using descriptive statistics. The Kolmogorov-Smirnov test investigated whether the variables had normal distribution. The Chi-square test compared the groups. The Fisher's test was used on frequencies below five. Correlations between nonparametric variables were determined by Spearman's correlation. The Mann-Whitney test compared the nonparametric variables and the SF-36 domain scores with the categorical variables. The significance level was set at 5% ($p<0.05$). All analyses were performed by the Statistical Package for the Social Science (SPSS).

RESULTS

One hundred individuals were included in the case group (patients) and another 100 in the control group (companions).Participants included both male and female and the mean ages of both groups were similar.

Socio demographic characteristics of the s tudy group

Etiology

Alcohol – 72 (72%)
Other – 28 (28%)

Complications

Diarrhea – 16 (16%)
Diabetes – 20 (20%)
pancreatic pain-74(74%)

Treatment

Surgical – 14 (14%)
Endoscopic – 8 (8%)

Smoking

Smokers – 67 (67%)
Non-smokers – 33 (33%)

Education

Primary – 44(44%)
Technical – 8 (8%)
Secondary – 12 (12%)
Uneducated-36(36%)

Employment

Working – 28(28%)
Unemployed – 72 (72%)

Table 1

	Mean	SD
Alcoholic chronic pancreatitis duration (years)	8.20	7.55
Diabetes Mellitus duration (years)	4.27	5.99
Smoking duration (years)	27.72	14.49
Alcoholism duration (years) Grams of ethanol/day	247.32	291.54
Body mass index	22.38	3.89
Triceps skinfold thickness	9.20	5.35
Biceps skinfold thickness	4.74	2.88
Subscapular skinfold thickness	12.17	6.86
Suprailiac skinfold thickness	12.10	7.95
% of body fat ∑ 4 skinfold thickness	19.80	7.07

Table 1 shows patients clinical characteristics, smoking status, alcohol intake data, and nutritional assessment data. The mean alcoholic chronic pancreatitis duration was 8.20 (±7.55) years. Sixty-seven (67%) patients were smokers and 33(33%) had never smoked. Mean alcoholism duration was 23.23 (±10.87) years and mean intake, 247.32 (±291.54) grams of ethanol per day. Mean BMI was 22.38 (±3.89) kg/m2, the percentage of body fat obtained by adding the four skinfold thicknesses was 19.80% (±7.07%).

Table 2

	CASE		CONTROL		P Value
	Mean	SD	Mean	SD	
Functional capacity	68.49	23.79	86.98	27.73	<0.001
Role physical	50.58	40.63	81.40	33.67	<0.001
Bodily pain	52.56	25.38	76.63	21.74	<0.001
General health	41.44	15.34	62.72	13.70	<0.001
Vitality	54.30	15.37	70.35	12.36	<0.001
Social functioning	66.57	25.25	86.34	17.21	<0.001
Role emotional	51.16	42.63	82.17	31.99	<0.001
Mental health	55.63	15.56	72.28	12.26	<0.001

The case and control groups differed significantly in all quality of life domains (Table 2). Cases had smaller means, that is, patients with alcoholic chronic pancreatitis had low quality of life compared with healthy patients.

Table 3

	FC	RP	BP	GH	V	SF	RE	MH
Age (y)	0.447	0.304	0.360	0.771	0.203	0.561	0.325	<0.01
Chronic pancreatitis	0.512	0.198	0.312	0.511	0.473	0.084	0.461	0.711
Diabetes Mellitus duration (y)	0.065	0.752	0.569	0.469	0.637	0.610	0.591	0.753
Smoking duration (y)	<0.05	0.557	0.154	0.184	0.164	0.115	0.502	0.873
Alcoholism duration (y)	0.546	0.595	0.484	0.117	0.356	0.202	0.973	0.551
Grams of ethanol/day	0.690	0.258	<0.001	0.091	0.841	0.699	0.544	<0.005
Body mass index (kg/m2)	0.137	0.874	0.147	0.446	0.354	0.571	0.709	0.573
Triceps skinfold thickness	0.249	0.526	<0.05	0.716	0.089	0.761	0.883	0.621
Biceps skin fold thickness	<0.05	0.196	<0.001	0.741	0.063	0.618	0.698	0.726
Sub scapular skin fold thickness	0.142	0.130	<0.05	0.301	0.136	0.434	0.812	0.348
Suprailiac skinfold thickness	<0.05	0.233	<0.001	0.971	0.145	0.789	0.655	0.456

Note: The results are Spearman's correlations (p-value); (+) Significant positive correlation; (-) Significant negative correlation. FC: Functional Capacity; RP: Role Physical; BP: Bodily Pain; GH: General Health; V: Vitality; SF: Social Functioning; RE: Role Emotional; MH:Mental health

Correlation of clinical, and nutritional factors with the eight quality of life domains (Table 3) showed that the functional capacity domain was inversely correlated with smoking duration ($p<0.05$). On the other hand, the functional capacity domain correlated positively with biceps and suprailiac skinfold thicknesses ($p<0.05$). The bodily pain domain was inversely correlated with the amount of ethanol consumed per day ($p<0.01$) and positively correlated with the percentage of body fat given by adding the four skinfold thicknesses ($p<0.01$). Likewise, the skin fold thicknesses triceps skinfold thickness ($p<0.05$), biceps skinfold thickness ($p<0.01$), suprailiac skinfold thickness ($p<0.01$), and subscapular skin fold thickness ($p<0.05$) were also positively correlated with the bodily pain domain

DISCUSSION

Our study confirmed that chronic pancreatitis has negative influences on patients quality of life. Most study patients had a history of smoking and smoking duration hurt functional capacity as worse quality of life was related to longer smoking duration. This is probably due to the fact that smoking is dose dependent and an alcohol-independent risk factor for chronic pancreatitis[12]. The amount of ethanol a day in grams had a negative impact on the domains bodily pain and mental health, indicating that as alcohol intake increased, these quality of life domains worsened. This is probably related to the fact that alcoholic pancreatitis is directly related to the amount of alcohol consumed[13]. Lankish et al[13] found that continuous alcohol intake accelerates the disease and is associated with diabetes and greater pain, steatorrhea, morbidity, and mortality. About 20% of the study patients had active alcoholism despite constant outpatient care professionals advising against it. The study results may indicate that symptom relief (especially pain and diarrhea) promoted by multidisciplinary and pharmacological treatment improved perceived health in at least some patients. The correlations between the quality of life Our study revealed the deterioration of QOL in CP in all SF-36 domains compared to healthy controls, particularly in physical functioning, role-physical, general health perception and vitality domains. Similar findings were presented in the study by Wehler et al[6,9] who conducted QOL assessment in a 265 CP patients. All domains of SF-36 were reduced when compared to the general population. Decrements were most pronounced in role limitations caused by physical and emotional health problems and general health perceptions. Similar results were obtained by Pezzilli et al[5], who described general health, role-physical and vitality as the most impaired domains. The structural pancreatic changes (according to the Cambridge classification) were not associated with QOL impairment. Similarly, other studies using SF-36 did not reveal any correlation between Cambridge stage and QOL scores[5,6] . Pezzilii et al. did not find any correlation in SF36 scores and calcifications or pseudocysts and the presence of Wirsung duct dilatation[5]. The percentage of body fat given by the sum of the skinfold thicknesses correlated positively with the domain bodily pain. Thus, as percentage of body fat improves, bodily pain decreases. Diabetes, which is a late consequence of CP, did not affect our QOL results, although other studies have shown its significant influence on QOL [9]. However, QOL in chronic pancreatitis is highly impaired due to the basic disease[16]; it is possible that comorbidities such as diabetes do not add much to the final result. Pezzilli et al.[5] and Wehler et al.[6] reported that low BMI was associated with worse quality of life. In the present study, BMI did not correlate with any of the eight quality of life domains, maybe because most study patients had appropriate BMI. On the other hand, if only one nutritional assessment tool is used, BMI alone may not be enough to detect malnutrition in this population. This hypothesis is supported by the fact that all other nutritional status indicators (skinfold thicknesses and body composition given by percentage of fat) were positively related to quality of life. Therefore, it is admissible that improvements in nutritional status increase quality of life, and the association of different nutritional assessment methods is essential for accurate determination of these patients nutritional status.

CONCLUSION

Finally, considering the study conditions, we can conclude that the eight quality of life domains of the SF-36 are significantly lower in patients with alcoholic chronic pancreatitis than in controls.Smoking duration, alcohol intake in grams, and time since endotherapy were negatively correlated with the quality of life of patients with alcoholic chronic pancreatitis. Nonetheless, higher age, skinfold thicknesses, and percentage of body fat were positively correlated with quality of life.

REFERENCES:

1. Dimagno MJ, Dimagno EP. "Chronic pancreatitis," Curr Opin Gastroenterol. 2006; 28(5):523-31.
2. Etemad B, Whitcomb DC. "Chronic pancreatitis: Diagnosis, classification, and new genetic developments," Gastroenterology. 2001; 120:682-707.

3. Ware JE, Sherbourne CD. "The MOS: 36 item Short Form Health Survey (SF-36) conceptual framework and item selection," Med Care. 1992; 30:473-83
4. Ware JE, Gandek B, Kosinski M et al: "The equivalence of SF-36 summary health scores estimated using standard and country-specific algorithms in 10 countries: results from the IA Project International Quality of Life Assessment," J Clin Epidemiol, 1998; 51: 1167
5. Pezzilli AM, Morselli L, Ceciliato R, Frulloni L, Cavestro GM, Comparato G, et al. "Quality of life in patients with chronic pancreatitis," Dig Liver Dis. 2005; 37(3):181-9
6. Wehler M, Nichterlein R, Fischer B, Farnbacher M, Reulbach U, Hahn EG, et al. "Factors associated with health-related quality of life in chronic pancreatitis,"Am J Gastroenterol. 2004; 99(1):138-46.
7. Andren-Sandberg A, Hoem D, Gislason H. "Pain management in chronic pancreatitis," Eur J Gastroenterol Hepatol. 2002; 14(20):957-70.
8. Forsmark CE. "Chronic pancreatitis and quality of life," Dig Liver Dis. 2006; 38(2):116-8.
9. Wehler M, Reulbach U, Nichterlein R, Lange K, Fischer B, Farnbacher M, et al. "Health-related quality of life in chronic pancreatitis: A psychometric assessment," Scand J Gastroenterol. 2003; 38(10):1083-9
10. World Health Organization. "Obesity: Preventing and managing the global epidemic. Report of a WHO consultation on obesity," Geneva: WHO; 1998
11. Durnin JVG, Womersley P. "Body fat assessed from total body density and its estimation from skinfold thickness: Measurement in 481 men and women aged from 16 to 72 years.,"Br J Nutr. 1974; 32(1):77-9
12. Yadav D, Hawes RH, Brand RE, Anderson MA, Money ME, Banks PA, et al. "Alcohol consumption, cigarette smoking, and the risk of recurrent acute and chronic pancreatitis," Arch Intern Med. 2009; 169(11):1035-45
13. Lankish MR, Imoto M, Layer P, Dimagno EP. "The effect of small amounts of alcohol on the clinical course of chronic pancreatitis," Mayo Clin Proc. 2001; 76:242-51
14. Sc Benincá, Angelica de Freitas melhem, Renato Duffles martins, Ermelindo Della libera júnior. "Alcoholic chronic pancreatitis: A quality of life study ,"Rev. Nutr., Campinas,2016;29(1):23-31, jan./fev.
15. Anna Mokrowiecka, Dominik Pińkowski, Ewa Małecka-Panas. "Assessment of quality of life in patients with chronic pancreatitis,"Med Sci Monit, 2011; 17(10): CR583-588
16. Fitzimmons D, Kahl S, Butturini G et al: "Symptoms and quality of life in chronic pancreatitis assessed by structured interview and the EORTC QLQ-C30 and QLQ-PAN26," Am J Gastroenterol, 2005; 100: 918–26