



Optimal Management of Early Surgery of Chronic Pancreatitis



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Abstract

The present research aims to investigate whether there are advantages of early Surgery treatment or not, especially for pain relief. Retrospective analysis of data of 147 patients from 2001 to 2020 was conducted, which underwent Surgery treatment of chronic pancreatitis. Patients who had been suffering from chronic pancreatitis symptoms for 3 years or more were included in the control group ("late Surgery treatment"), and patients who had been noting symptoms of chronic pancreatitis less than 3 years were included in the study group ("early Surgery treatment"). All patients completed the EORTC QLQ-30, SF-36 questionnaires, as well as the questionnaire developed by the research authors, via telephone or mail or during the visit. According to all scales of the SF 36 questionnaire, except for "Physical functioning", the group of "Early Surgery treatment" prevails over the group of "Late Surgery treatment". The "Early Surgery treatment" group had the best average scores on all functional scales of the EORTC QLQ-30 questionnaire compared to the "Late Surgery treatment" group, except for the Cognitive Functioning scale. From the symptomatic scales, the "Early Surgery treatment" group had the best averages of Pain and Diarrhoea.

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1 Introduction

Chronic pancreatitis (CP) is a multifactorial, fibroinflammatory syndrome in which repetitive episodes of pancreatic inflammation lead to extensive fibrotic tissue replacement, resulting in chronic pain, exocrine and endocrine pancreatic insufficiency, reduced quality of life, and a shorter life expectancy (Beyer et al., 2020). The pathophysiology of chronic pancreatitis is fairly complex and includes acinar cell injury, acinar stress responses, duct dysfunction, persistent or altered inflammation, and/or neuro-immune crosstalk, but these mechanisms are not completely understood (Kemalasarri et al., 2018). Ductal obstruction (and resulting tissue hypertension) plays a major role in pancreatic pain, mainly by inducing ischemia and the resulting inflammatory cascade. Pancreatic ductal decompression is considered a cornerstone of pain therapy by many surgeons. In the group of CP patients with enlargement of the head of the pancreas, pancreatic resection in conjunction with or without upstream main ductal decompression may be more valuable, according to the theory of the pancreatic head pacemaker (Büchler et al., 1993). Treatment has traditionally been medical with analgesics and enzyme supplementation, while Surgery management has been reserved for patients with intractable pain or complications (Liao et al., 2003). Surgery procedures aim to decompress and/or resect the nidus of inflammation. Surgery denervation strategies are ineffective and not appropriate as a first-line treatment (Andersen & Frey, 2010). Recently, combination procedures of drainage and local resection have been increasingly used as an alternative to major resection, with success in symptom alleviation and low morbidity and mortality (Ahmad et al., 2006). Current studies suggest that surgery is better than endoscopy in the short term; it is not clear whether these benefits are sustained (Ahmad et al., 2006). Therefore, the issue of Surgery treatment of chronic pancreatitis is relevant.

2 Materials and Methods

Numerous investigations on the Surgery treatment of chronic pancreatitis are devoted to the choice of the most effective method of Surgery treatment, in particular, to various modifications of previously developed operations (Hamanou et al., 2002). As a rule, such long-term indicators of efficiency as control of a pain syndrome and exo-, the endocrine function of the pancreas are compared between groups of patients stratified first of all by type of Surgery intervention (Shevchenko et al., 2016). However, in a meta-analysis and systematic review, Zhao et al. (2017), have concluded that although duodenal resections of the pancreatic head have advantages over pancreatoduodenal resection about the duration of the surgery, needs for blood transfusions, duration of hospitalization, weight gaining, and slightly better exocrine function in the long-term period, however, all operations were equally effective in terms of pain control, postoperative complications, endocrine, and exocrine insufficiency. Bachmann (2014), has compared the most common variants of duodenal-preserving resection of the head of the pancreas in a randomized controlled trial – Beger’s and Frey’s Surgery interventions (Lammert et al., 2003). After 16 years of observation, postoperative mortality rates, pain, and quality of life, frequency of endocrine and exocrine insufficiency did not differ statistically significantly. In a retrospective study, Bellon et al. (2019), compared the results of the so-called Hamburg modification of Frey’s operation; as a result, the advantages of such an operation over other duodenal-preserving resections of the pancreatic head were revealed; exo-, endocrine function of a pancreas did not differ from the point of view of control of a pain syndrome and the life quality (Konstantinidis et al., 2010). At the same time, the authors pointed out two important findings, namely: continued alcohol intake after surgery was significantly associated with relapse of pain; there was no reliable data on the duration of chronic pancreatitis, it was noted that almost all patients had terminal disease stage (Bellon et al., 2019; Yarmukhamedova et al., 2021; Lestari et al., 2021; Widana et al., 2020). In 2012, Dutch researchers have concluded that although the choice of the surgery based on pathological anatomical changes allows obtaining results of pain control in chronic pancreatitis from excellent to satisfactory ones, however, an early Surgery intervention performed before many endoscopic treatment attempts and the need for strong analgesics may

be crucial in preventing recurrence of pain after surgery concerning CP (van der Gaag et al., 2012). The scientific work of C. Mel Wilcox et al. may be a partial confirmation of the above (Wilcox et al., 2014), where no reliable relationship was found between the findings and the presence and severity of pain by comparing the surveys of patients and their imaging data.

The duration of symptoms of chronic pancreatitis for a period of fewer than 3 years before the surgery was established as an independent factor in greater pain reduction and lower incidence of exocrine insufficiency after the surgery (Ali et al., 2012). Several retrospective cohort studies (Yang et al., 2015; Ke et al., 2018), randomized clinical trials (Issa et al., 2020), and systematic reviews are devoted to the issue of early Surgery treatment (Yang et al., 2014). Each of the investigations showed better pain control and preservation of exocrine pancreatic function during early Surgery treatment of CP; the generally accepted definition of early Surgery treatment was 3 years or less from the onset of the disease. Along with this, one of the conclusions of these studies is the necessity for further scientific research, taking into account the shortcomings of these studies, namely: retrospective nature and a small number of patients (Yang et al., 2015; Ke et al., 2018), comparison primarily with endoscopic treatments (Issa et al., 2020), few large RCTs devoted to early Surgery treatment (Yang et al., 2014).

The purpose of the research

The purpose of the research lies in analyzing short-term and long-term results of Surgery treatment of chronic pancreatitis in terms of timing and, accordingly, the neglect of the disease (Tanaka et al., 2000). A retrospective analysis of data of 147 patients for the period from 2001 to 2020 operated in connection with CP was conducted in the clinic of surgery and minimally invasive technologies of Zaporizhia Medical Academy of Postgraduate Education, Ukraine. Criteria for inclusion in the research were as follows: patients whose main intervention was surgery, which was aimed at the main clinical and pathogenetic signs of CP, such as pancreatic ductal and/or parenchymal hypertension (Carchi et al., 2021). Exclusion criteria were as follows: patients who underwent only isolated Surgery interventions or isolated endoscopic transpapillary or drainage interventions; patients who underwent isolated surgery due to complications of CP, such as biliary stricture with/without mechanical jaundice, duodenal stenosis, external drainage of the pseudocyst or cystectomy of the pseudocyst that was not connected with the major pancreatic duct (MPD), surgery on splanchnic nerves. The patients were divided into two groups according to the duration of symptoms of CP. The patients who considered themselves ill for 3 years or more were included in the control group (group of "late Surgery treatment" or group 2), and the patients who noted symptoms of CP less than 3 years were included in the study group (group of "early Surgery treatment" or group 1).

All patients completed the EORTC QLQ-30, SF-36 questionnaires during the visit, by telephone or mail, as well as the questionnaire developed by the research authors, which includes a visual analog pain scale (VAS) from 1 to 10, where the value "5" is not marked and is used to separate three categories of answers: "0" - no pain, "1-4" - moderate pain, "6-10" - severe pain; the information on endocrine function based on two categories of answers: "no diabetes/improvement", "the first onset/worsening"; the information on exocrine function - the answers are divided into two categories: "steatorrhea", "no steatorrhea"; the presence of risk factors because of smoking and alcohol, the answers were evaluated in two categories, respectively - "has never smoked/do not smoke", "gave up smoking/smoke" and "used alcohol during the year", "did not drink alcohol". The patients who operated before 2011 were interviewed during 2011 at various times after surgery; since 2011, operated patients were routinely interviewed a year after the surgery (Polatova et al., 2021).

The statistical analysis was performed by applying IBM SPSS Version 28 (SPSS Inc., Chicago, Illinois). Continuous and categorical data are reflected as mean with standard deviations (SD) and percentages, absolute/relative frequencies, respectively. Before fulfilling the statistical analysis, continuous data were checked for normality by applying the Kolmogorov-Smirnov consistency criterion (Massey Jr, 1951). The univariate analysis of variance of MANOVA was used to compare normally distributed continuous data (posthoc analysis was not applied forasmuch as there are only two categories in the independent variable "Clinical Group": "Early Surgery treatment" and "Late Surgery treatment") and the two-tailed Student's t-test. The comparison of categorical data was performed using Pearson's χ^2 , or Fisher's exact criterion, depending on the number of expected frequencies. The level of statistical significance is set at $p < 0.05$.

3 Results and Discussions

73 patients were included in the group of “early Surgery treatment” 74 patients - in the group of “late Surgery treatment”. The mean age of all patients was 46,22 years, range 28 – 74 years, statistical deviation – 10,47. According to the WHO classification (2009) in group 1 (“early Surgery treatment”), the patients were distributed by age as follows: 33 people (44,6%) - young age (25 - 44 years); 35 people (47,3%) - middle age (44 - 60 years old); 6 people (8,1%) - ripe old age (60 - 75 years old). In the group 2 (“late Surgery treatment”), the patients were distributed by age as follows: 32 people (43,8%) - young age (25 - 44 years); 31 people (42,5%) - middle age (44 - 60 years); 10 people (13,7%) - ripe old age. The age groups did not differ statistically significantly ($\chi^2=1.251$, $p>0,05$). In total, there were 117 men (79,6%) and 30 women (20,4%) in both groups; the groups by gender did not differ statistically significantly ($\chi^2=0.603$, $p>0,05$). The diseases of cirrhosis and portal hypertension ranked first in terms of prevalence among the comorbidities in both groups: 12 patients (16,2%) in group 1 (“Early Surgery treatment”) and 10 patients (13,7%) in group 2 (“Late Surgery treatment”); the cholelithiasis was in second place in the prevalence: 5 patients (6,8%) in group 1 (“Early Surgery treatment”) and 5 patients (6,9%) in group 2 (“Late Surgery treatment”), respectively; the ischemic heart disease was in third place: 3 patients (4,1%) in group 1 (“Early Surgery treatment”) and 6 patients (8,2%), in group 2 (“Late Surgery treatment”) respectively. The groups did not differ statistically significantly in the nature and presence of concomitant pathology ($p>0,05$). Complications of CP on the part of the pancreas and surrounding organs are summarized in Table 1.

Table 1
Local organs’ complications of chronic pancreatitis, by groups, before the Surgery intervention

	Clinical group				Statistical test	
	Early Surgery treatment (less than 3 years)		Late Surgery treatment (more than 3 years)			
	Amount	% of the group	Amount	% of the group	χ^2, p	Fisher’s exact criterion, p
Parenchymal calcifications	31	41,9%	42	57,5%	3,597, $p=0,058$	
Concretions of the major pancreatic duct	16	21,6%	22	30,1%	1,390, $p=0,238$	
Pseudocysts	52	70,3%	52	71,2%	0,16, $p=0,89$	
Duodenal stenosis	1	1,4%	8	11,0%		$p=0,017$
Pancreatic fistulas	External	7	9,5%	4	5,5%	$p=0,286$
	Internal	2	2,7%	0	0,0%	$p=0,286$
Biliary stricture						
Biliary stricture with mechanical jaundice	13	17,8%	17	23,9%		$p=0,04$

The greater neglect of the disease in the “Late Surgery treatment” group is statistically valid reflected ($p<0.05$) by a greater number of patients with complications from the surrounding organs. In the “Early Surgery treatment” group compared with the “Late Surgery treatment” group, symptomatic stenosis of the duodenum was observed in 1 patient (1,4%) and 8 patients (11,0%), respectively; biliary stricture with clinical and laboratory signs of mechanical jaundice was observed in 13 patients (17,8%) and 17 patients (23,9%), respectively; biliary stricture without mechanical jaundice at the time of hospitalization, however, with intermittent episodes of mechanical jaundice in the anamnesis and/or instrumental (choledochal diameter ≥ 10 mm) and laboratory signs (increased alkaline phosphatase ≥ 3 times declination) was observed in 1 patient (1,4%) and 7 patients (9,9%), respectively. The distribution of patients by surgery performed on the pancreas is represented in Table 2. There were no statistically significant differences between groups by type of Surgery intervention ($p>0,05$).

Table 2
Distribution of Surgery interventions on the pancreas

The type of operation on the pancreas	Clinical group		In total, in both groups
	Early Surgery treatment (less than 3 years)	Late Surgery treatment (more than 3 years)	
Distal resection of the pancreas	13 8,8%	13 8,8%	26 17,7%
Frey's operation	27 18,4%	24 16,3%	51 34,7%
Virsungectomy	2 1,4%	3 2,0%	5 3,4%
Beger's operation	3 2,0%	11 7,5%	14 9,5%
Pancreaticoduodenal resection	4 2,7%	5 3,4%	9 6,1%
PEA \ CPEA (Pancreaticojejunoanastomosis \ Cystopancreatojejunostomy)	21 14,3%	13 8,8%	34 23,1%
Distal resection + Frey's operation	1 0,7%	1 0,7%	2 1,4%
Distal resection + Pancreaticojejunoanastomosis	3 2,0%	3 2,0%	6 4,1%

Postoperative mortality was higher in the "Late Surgery treatment" group - 3 patients died in the early postoperative period (1 - from intraperitoneal bleeding, 1 - from liver failure, 1 - due to failure of gastroenteroanastomosis) and 1 - within 90 days from the date of surgery. There is no mortality in the "Early Surgery treatment" group. In the "Early Surgery treatment" and "Late Surgery treatment" groups, postoperative pancreatic fistulas occurred in 4 patients (2,7%) and 10 patients (6,8%), respectively; all of the class "B" for the International Study Group of Pancreatic Fistula (ISGPS) closed up singly; transient biliary fistulas occurred in 2 patients (1,4%) and 5 patients (3,4%), closed up singly; postoperative bleeding occurred in 3 patients (2,1%) and 4 patients (2,7%), all of the class "B" for the International Study Group of Pancreatic Fistula (ISGPS), hemostasis was achieved by relaparotomy in all cases. There were no statistically significant differences between the groups in the frequency of these complications ($p > 0,05$). According to the average duration of the Surgery intervention - 140,27 minutes, SD - 47,31 and 152,4 minutes, SD 37,95; the groups did not differ statistically significantly: $t(145) = -1,713$, $p(\text{double}) = 0,08$. Data from the questionnaires SF 36 were obtained from 74 and 69 persons from the "Early Surgery treatment" and "Late Surgery treatment" groups, EORTC QLQ-30 from 74 and 66 persons, respectively (four patients from the "Late Surgery treatment" group did not complete or did not complete in full the EORTC QLQ-30 questionnaire).

Table 3
The results of the questionnaires SF-36 by groups (average with SD), the level of p-significance obtained by analysis of variance

	Clinical groups	Average	SD	Quantity	p, MANOVA
Physical Functioning SF 36	Early Surgery treatment (less than 3 years)	80,4730	11,70906	74	0,430
	Late Surgery treatment (more than 3 years)	81,9565	10,61413	69	
Role Physical Functioning SF 36	Early Surgery treatment (less than 3 years)	74,5946	17,31570	74	<0,001
	Late Surgery treatment (more than 3 years)	48,5507	26,38936	69	
Bodily Pain SF36	Early Surgery treatment (less than 3 years)	72,5000	13,47067	74	<0,001
	Late Surgery treatment (more than 3 years)	50,5217	18,80520	69	
General Health SF 36	Early Surgery treatment (less than 3 years)	67,7432	16,02828	74	<0,001
	Late Surgery treatment (more than 3 years)	55,2899	15,35090	69	
Vitality SF 36	Early Surgery treatment (less than 3 years)	71,8919	10,71750	74	<0,001
	Late Surgery treatment (more than 3 years)	65,5797	11,03258	69	
Social Functioning SF 36	Early Surgery treatment (less than 3 years)	83,2297	12,78569	74	<0,001
	Late Surgery treatment (more than 3 years)	68,8406	19,72038	69	
Role Emotional SF 36	Early Surgery treatment (less than 3 years)	72,4873	23,65010	74	<0,001
	Late Surgery treatment (more than 3 years)	54,1064	26,26177	69	
Mental Health SF 36	Early Surgery treatment (less than 3 years)	78,3243	5,99568	74	<0,001
	Late Surgery treatment (more than 3 years)	72,6957	12,64830	69	

As shown in Table 3, it is statistically valid that according to all indicators of the SF 36 questionnaire, except for "Physical functioning", the "Early Surgery treatment" group prevails over the "Late Surgery treatment" group ($p < 0,05$). The difference is especially pronounced in the average key indicators for a patient with CP, such as "Pain": 72,5, SD 13,47 versus 50,52, SD 18,8; "Role Physical Functioning": 74,59, SD 17,31 versus 48,55, SD 26,38.

Table 4
The results of the questionnaires EORTC QLQ-30 by groups (average with SD), the level of significance p obtained in the analysis of variance

	Clinical groups	Average	SD	Quantity	p, MANOVA
EORTC Physical Functioning	Early Surgery treatment (less than 3 years)	83,3333	11,58648	74	0,018
	Late Surgery treatment (more than 3 years)	78,8889	10,16670	66	
EORTC Role Functioning	Early Surgery treatment (less than 3 years)	78,3784	16,02171	74	<0,001
	Late Surgery treatment (more than 3 years)	55,3030	17,08678	66	
EORTC Emotional functioning	Early Surgery treatment (less than 3 years)	82,9955	11,15813	74	0,005
	Late Surgery treatment (more than 3 years)	76,6414	14,99428	66	
EORTC Social Functioning	Early Surgery treatment (less than 3 years)	79,0541	17,01929	74	<0,001
	Late Surgery treatment (more than 3 years)	68,6869	16,67055	66	
EORTC Cognitive functioning	Early Surgery treatment (less than 3 years)	86,9369	14,92505	74	0,191
	Late Surgery treatment (more than 3 years)	83,8384	12,73319	66	
EORTC Pain	Early Surgery treatment (less than 3 years)	27,7027	15,17955	74	<0,001
	Late Surgery treatment (more than 3 years)	52,0202	22,55386	66	
EORTC Weakness	Early Surgery treatment (less than 3 years)	25,3754	15,44429	74	0,175
	Late Surgery treatment (more than 3 years)	28,6195	12,33601	66	
EORTC Nausea \ Vomiting	Early Surgery treatment (less than 3 years)	3,3784	9,93883	74	0,239
	Late Surgery treatment (more than 3 years)	1,7677	5,17125	66	
EORTC Dyspnea	Early Surgery treatment (less than 3 years)	11,2613	21,56511	74	0,82
	Late Surgery treatment (more than 3 years)	12,1212	23,12091	66	
EORTC Sleep disorders	Early Surgery treatment (less than 3 years)	15,3153	25,39741	74	0,127
	Late Surgery treatment (more than 3 years)	21,7172	23,74539	66	
EORTC Loss of appetite	Early Surgery treatment (less than 3 years)	14,8649	20,00144	74	0,41
	Late Surgery treatment (more than 3 years)	22,2222	22,13659	66	
EORTC Constipation	Early Surgery treatment (less than 3 years)	11,7117	22,36574	74	0,769
	Late Surgery treatment (more than 3 years)	10,6061	22,00162	66	

EORTC Diarrhea	Early Surgery treatment (less than 3 years)	7,6577	14,11768	74	<0,001
	Late Surgery treatment (more than 3 years)	22,7273	23,50420	66	
EORTC Financial difficulties	Early Surgery treatment (less than 3 years)	33,3333	27,02950	74	0,068
	Late Surgery treatment (more than 3 years)	41,9192	28,23019	66	
EORTC General health \ Quality of life	Early Surgery treatment (less than 3 years)	77,4775	13,06594	74	<0,001
	Late Surgery treatment (more than 3 years)	61,3636	13,68419	66	

The “Early Surgery treatment” group compared with the “Late Surgery treatment” had statistically significant ($p < 0,05$) better average indicators for all functional scales of the EORTC QLQ-30 questionnaire, except for the indicator “Cognitive functioning”. From symptomatic scales (in the EORTC QLQ-30 questionnaire in contrast to SF-36, the higher the symptomatic scale is, the more pronounced the corresponding symptom is), statistically-valid differences ($p < 0,05$) were obtained in the indicators “Pain” and “Diarrhea”. The “Early Surgery treatment” group had better average indicators compared to “Late Surgery treatment” group, namely: Pain – 27,7, SD 15,17 versus 52,02, SD 22,55, “Diarrhea” - 7,65, SD 14,11 versus 22,72, SD 23,5. The average score of the scale “General health \ Quality of life”, statistically significant ($p < 0,05$) was better in the “Early Surgery treatment” group.

Data of the author’s questionnaire were obtained from 74 and 69 patients from the “Early Surgery treatment” group and the “Late Surgery treatment” groups, respectively (1 patient from the “Late Surgery treatment” group did not answer the questions “VAS”, “Smoking”, “Alcohol consumption”. The results are represented in Table 5.

Table 5.

The results of the author’s questionnaire by groups, frequency (%), the level of significance of differences between groups, p

		Clinical group				χ^2 Pearson, p
		Early Surgery treatment (less than 3 years)		Late Surgery treatment (more than 3 years)		
		Amount	% of the group	Amount	% of the group	
VAS pain	No pain	7	9,5%	4	5,9%	36,564 $p < 0,01$
	Moderate pain	65	87,8%	33	48,5%	
	Severe pain	2	2,7%	31	45,6%	
Diabetes mellitus after surgery	Diabetes mellitus revealed for the first time \ Worsening of diabetes mellitus	26	35,1%	46	66,7%	14,201 $p < 0,01$
	No diabetes mellitus \ Improvement of condition of diabetes mellitus	48	64,9%	23	33,3%	
Exocrine insufficiency of the pancreas (Steatorrhea)	No exocrine insufficiency	29	39,2%	15	21,7%	5,104 $p = 0,024$
	Exocrine insufficiency	45	60,8%	54	78,3%	
Smoking	Never smoked	29	39,2%	27	39,7%	0,004

	Gave up \ I smoke	45	60,8%	41	60,3%	p=0,95
Alcohol consumption for the last year	Never consumed	45	60,8%	44	64,7%	0,23
	Consumed	29	39,2%	24	35,3%	p=0,632

The “Early Surgery treatment” group and the “Late Surgery treatment” group did not differ statistically significantly ($p > 0,05$) by table items “Smoking” and “Alcohol consumption for the last year”. However, they significantly differed ($p < 0,05$) by the presence and degree of pain on VAS “Severe pain” in 2 patients (2,7%) versus 31 patients (45,6%), respectively), by the presence and degree of endocrine insufficiency “Diabetes mellitus revealed for the first time \ Worsening of diabetes mellitus” in 26 persons (35,1%) versus 46 persons (66,7%), respectively), by the presence of exocrine insufficiency “No exocrine insufficiency” in 29 persons (39,2%) and 15 persons (21,7%), respectively).

The questionnaire created by the author aimed to obtain dichotomous, clinically significant answers, such as “yes \ no”, “presence \ absence”, instead of obtaining surrogate results, which it is difficult to compare, such as the level of a laboratory indicator, the number of points on a scale, which according to some researchers is necessary for some places, but still it is one of the potential shortcomings of numerous modern scientific papers (Lowe et al., 2018; Vinicius et al., 2020; Kemp & Prasad, 2017). Concerning the methods of laboratory assessment of the pancreas, in particular exocrine function, it is popular to determine the level of fecal elastase. It should be noted that Vanga et al. (2018), in their systematic review and a meta-analysis have concluded that although the normal level of elastase-1 in the stool eliminates exocrine insufficiency of the pancreas in irritable bowel syndrome and is normal, unrelated to CP diarrhea, a reduced level (less than 200) of this laboratory indicator in many cases is the wrong positive. Therefore, to simplify obtaining information about the state of endocrine and exocrine function, especially by telephone or mail, the questions were formulated in such a way that patients who faithfully followed the recommendations at discharge from the clinic and were under the supervision of specialists, family doctors, gave us the main result - whether the corresponding complication of CP has appeared or worsened.

When planning the research, we have considered some questionnaires, especially in terms of their informativeness about the clinical manifestations of CP, such as pain, steatorrhea. At first, glance was, the “Izbicky pain score” was the most appropriate to assess the pain, significance, and informativeness of which was confirmed in many studies on CP (Issa et al., 2020; Kuhlmann et al., 2021). However, the difficulty of obtaining such information as disability during the year as a result of CP was revealed (it would be difficult to apply and interpret among non-working patients); the table item regarding the type of analgesia was also unacceptable - narcotic analgesics were among the possible answers, but the use of tramadol and morphine is not a standard practice in Ukraine in pain relief of patients with CP. Therefore, the authors of the research have used the VAS of their questionnaire and the corresponding symptomatic scales of the SF-36, EORTC QLQ-30 questionnaires to assess the pain. Confirmation of the usefulness of the questionnaire specified, which smoothly combines the initial part of the discussion with the end, is the scientific work of Olesen et al. (2020), where using EORTC QLQ-30 the authors have established that the pain and the presence of etiological factors (smoking, alcohol consumption) is the main determinant of the life quality of a patient with CP. It should be noted that the presence of risk factors did not differ between groups in our research, which eliminates the impact of such an important potential cofactor on the life quality.

The duration of the Surgery intervention has its effect on the control of the pain syndrome not only at the level of the direct interrelationship “longer duration of the disease - more pronounced fibrosis - greater pain”, however, also by preventing the occurrence of pathological nerve chains to the formation of a stable focus of neuropathic pain in the central nervous system (Atsawarungrangkit & Pongprasobchai, 2015), which is not amenable to the following Surgery and interventional procedure (Drewes et al., 2019), aimed at interrupting nociception from the pancreas. The hypothesis outlined may be promising in the development of a detailed mechanism for assessing the presence/absence of neuropathic mechanisms and their clinical application.

4 Conclusion

The present research did not aim to reject the individualized approach in the choice of surgery for CP (the choice of the Surgery intervention depending on the presence of certain pathological changes in the anatomy of the pancreas and surrounding organs - for instance, in case the pancreatic head is enlarged, it is better to perform duodenum-preserving resection of the pancreatic head than pancreatojejunostomy) or compare one type of operation with another. In the case of similar Surgery interventions and their short-term results, patients who operated up to 3 years from the onset of symptoms of CP had better indicators of life quality, pain control, pancreatic function compared to patients with longer disease duration. Therefore, taking into account the comparative safety in terms of the risk of typical complications of “early Surgery treatment”, namely: postoperative pancreatic fistula, bleeding, it can be argued that not the choice of surgery, however, the duration of the disease is the major factor in the success of the Surgery treatment of chronic pancreatitis in terms of long-term results.

Acknowledgments





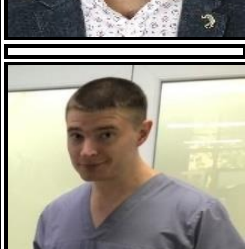
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