

# An Assessment of Awareness of Specialists in Adequate Diagnostics of Chronic Pancreatitis in Kazakhstan

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## Abstract

Our national center of gastroenterology provides highly specialized care, including chronic pancreatitis. Another area of our activities is educational programs, including postgraduate and fellows' courses. Thereby, we have noted significant gaps in the knowledge of the specialists that involved in the chronic pancreatitis management. The most critical downsides are related to insufficient attention to etiology and risk factors, using outdated classifications, the lack of knowledge in arsenal of diagnostic techniques, polypharmacy or application of low level of evidence treatment methods. Finally, we have made amendments in the National Clinical Protocol in Chronic Pancreatitis [1], updated the State Educational Standard for residents of the gastroenterological profile [2]. The aim of the study was the analysis of the basic knowledge among different specialists in the management of chronic pancreatitis (CP) around the country. This qualitative study consists of two parts, including focus group interviews followed by interviews with the specialists across the country, which was conducted during the period 2015-2018. In this paper, we present results of diagnostic approaches at the different levels of medical care. The general practitioners have noted the absence of modern methods of laboratory and visual diagnostics in their routine practice, therefore explaining the plenty of the complicated forms. Another issue is the low specialist's adherence to clinical guidelines, poor knowledge of the risk factors and overestimation of the clinical presentation value except malnutrition symptoms. On the other hand, surgeons and other specialists are not ready to implement modern diagnostic tools and methods in their practice. Obviously, in accordance with the results of our study, our educational center should con-

duct a number of training activities, as well as develop new algorithms for medical care specialists.

## Keywords

Non-Interventional Diagnostic Methods, Chronic Pancreatitis Symptoms, Clinical Guidelines, Specialist's Awareness

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## 1. Introduction

Chronic pancreatitis is an important socio-economic problem given its prevalence, morbidity increase, temporary disability and incapacitation. It is responsible for 5.1% to 9% of gastrointestinal disturbances [3], while in general clinical practice it makes up from 0.2% to 0.6% [4].

In the past 30 years, the global trend towards an increase of more than 2-fold of acute and chronic pancreatitis was observed [5]. While in the 80s the incidence of CP was 3.5 - 4.0 per 100 thousand of population a year [6], in the last decade a steady increase in the incidence of pancreatitis was registered, affecting annually 8.2 to 10 people per 100 thousand of population [5].

The pertinence of pancreatitis timely diagnosis is reinforced by the fact that CP is the precancerous condition, specifically for pancreatic carcinoma development. Usually CP develops in adulthood (35 - 50 years old). Mortality after the initial diagnosis on average makes up 11.9% [7].

Up to 20% of CP patients die from complications developing after pancreatitis exacerbation, some are the results of secondary digestive disorders and infectious complications. Literature data indicate that pancreatic cancer related to mortality increases alongside with the increase in the CP incidence [5] [7] [8].

Diagnostics of pancreatic diseases have always been considered as one of the most complex problems of gastroenterology. Since there are no pathognomonic symptoms for the given disease, the diagnosis should be based on the objective criteria of imaging methods (CT or MRI) [3]. The choice of the imaging technique should be based on its availability, appropriate skills of the medical staff and degree of the study invasiveness [9] [10]. Thus, being the most informative method in early CP diagnostics, endoscopic ultrasound imaging requires high qualification on the part of a specialist and a strictly standardized approach [5] [6] [7].

Rapid development of pancreatology is determined, among other things, by the desire for early CP diagnosis based on timely measures making it possible to reduce the rate of disease progression and improve the life quality of patients, in spite of being accompanied by the appearance of a large number of scientific publications devoted to the study of CP etiology, mechanisms of its pathogenesis, new diagnostic and therapeutic techniques [6]. Quite often a practitioner is unable to timely follow even the fundamental works on clinical pancreatology and pharmacotherapy, letting alone individual research papers.

For several decades, many authors have pointed out that “training of physicians in clinical pancreatology is dire” [3] the lack of routine methods for diagnosing CP, and the absence of a single method that allows early diagnosis or adequate therapy [4] [5] [6]. At the same time, according to the literature, we found only a few studies aimed at studying knowledge and opinions of the specialists about CP management. Thus, according to a cross-sectional study in Ireland, it was noted that the specialists were more responsive to acute attacks, as well as when it was necessary to escalate therapy or urgent indications [7]. In addition, the researchers pointed out the lack of time for a comprehensive examination, poor communication between the primary and inpatient medical care levels, and insufficient nutritional correction.

Given this, a qualitative study has been completed to assess awareness of the specialists about diagnostic and treatment approaches in real pancreatology practice.

## 2. Material and Methods

**Study objective.** To study the specialist’s awareness about the proper diagnosis and treatment of chronic pancreatitis aimed to develop recommendations and relevant information for practitioners in Kazakhstan. In order to achieve objective, we have held 3 focus-group discussions in Almaty city. The focus group participants were general practitioners, inpatient therapists and surgeons, ultrasound specialists who gave informed consent to participate in study. Discussions were lasted for 50 - 60 minutes and recorded on video and audio. Twenty-one specialists took part in the study; one of them did not give a single answer. In total the results of 20 participants of the focus group were accepted for the analysis. Among them, 3 of the participants were from the private and 3 from the state outpatient clinics, 7 were inpatient physicians and gastroenterologists, 2 surgeons and 5 others ultrasound diagnostics specialists.

The questionnaire was developed based on the results of the group interview for the second stage of the study, 1000 doctors from 5 regions of Kazakhstan took part in it: northern region (Nur-Sultan city), southern (Shymkent and Taraz cities); west Kazakhstan (Aktobe), central and east regions (Karaganda, Semey and Ust Kamenogorsk) and southeast (Almaty and Almaty region). The sample size was formed by a continuous method. All specialists who expressed their informed consent participated in the study. Five categories of doctors took part in the survey: general practitioners, internists, gastroenterologists, surgeons and ultrasound diagnostic specialists from different levels of medical care, who involved in the management of CP.

The questionnaire consisted of 34 questions: general, the region, length of work and workload; the section with questions on estimation of their knowledge and compliance with international standards and the National Clinical Protocol for the diagnosis and treatment of CP.; as well as the specialist’s opinion about the reasons for ineffective management of this disease), see Appendix [4] [11]

[12] [13] [14]. Ethical approval and legal expertise of the study have been carried out by the Local Ethical Committee of the Research Institute of Cardiology and Internal Diseases.

When the questionnaire results processing the frequencies of the response options were calculated, the likelihood ratio criterion was applied for the inter-group distribution. The differences were considered statistically significant at the  $p < 0.05$  level. Statistical analysis was performed using the IBM SPSS package, version 19.

Systematic error reduction. The interview has been preliminarily tested among 8 fellow gastroenterologists in our department to specify the wording of the questions in order to minimize the number of leading or unclear questions.

Ethical approval and legal expertise of the study have been carried out by the Local Ethical Committee of the Research Institute of Cardiology and Internal Diseases and approval has been obtained for the implementation.

### 3. Results

The socio-demographic distribution of the responders in the second part of the study is summarized in **Table 1**, **Table 2**.

**Epidemiology.** 30% of focus group participants mentioned a wide spread of CP within the general population. A significant proportion of the interviewed doctors (32.1% and 57.4 outpatient and inpatient specialists respectively as well as 47.7% of surgeons,  $p = 0.004$ ) noted that during the day several patients with this disease were on treatment in the ambulatory or in the hospital.

**Table 1.** The socio-demographic distribution of the responders.

Indicators and parameters		n (%)
Region	Nur-Sultan and region	73 (17.8)
	West Kazakhstan	53 (13)
	Almaty	109 (26.7)
	Central and East Kazakhstan	78 (19.1)
	South Kazakhstan	96 (23.5)
Age	21 - 30	109 (26.7)
	31 - 40	132 (32.3)
	41 - 50	96 (23.5)
	51 - 60	57 (13.9)
	61 - 70	15 (3.7)
Gender	Female	339 (82.9)
	Male	70 (17.1)
Urban or rural	Urban	358 (87.5)
	Rural	51 (12.5)
Specialty	General practitioners	172 (42.1)

## Continued

	Gastroenterologists	29 (7.1)
	Outpatient internists	164 (40.1)
	Inpatient internists/gastroenterologist	25 (6.1)
	Outpatient surgeon	7 (1.7)
	Inpatient surgeon	12 (2.9)
Length of work	11 - 15 years	69 (16.9)
	16 - 20 years	59 (14.4)
	21 - 25 years	40 (9.8)
	5 - 10 years	85 (20.8)
	More than 25 years	54 (13.2)
	Less than 5 years	102 (24.9)
The level of medical category	None	169 (41.3)
	First	110 (26.9)
	Second	68 (16.6)
	The highest	62 (15.2)
Academic degree	PhD	2 (0.5)
	None	407 (99.5)
Number of patients admitted per day	11 - 20	157 (38.4)
	21 - 30	144 (35.2)
	More than 30	54 (13.2)
	Less than 10	54 (13.2)
Frequency of patients with chronic pancreatitis	1 per day	52 (12.7)
	Few per day	148 (36.2)
	1 per week	44 (10.8)
	Few per week	161 (39.4)
	1 per month	4 (1)

**Table 2.** The specialist's workload in accordance with place of work.

Frequency of patients	Doctors, n (%)			P
	Outpatient, n = 336	Hospitals, n = 54	Surgeons, n = 19	
1 per day	48 (14.3)	2 (3.7)	2 (10.5)	0.004
Few per day	108 (32.1)	31 (57.4)	9 (47.4)	
1 per week	36 (10.7)	7 (13)	1 (5.3)	
Few per week	142 (42.3)	13 (24.1)	6 (31.6)	
1 per month	2 (0.6)	1 (1.9)	1 (5.3)	

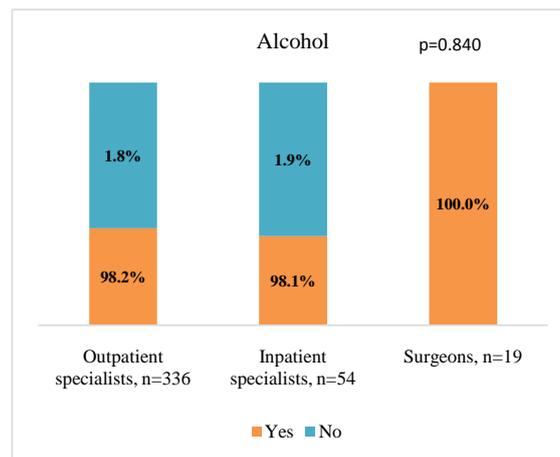
### ***Etiology and risk factors.***

CP belongs to genetically determined pathologies; however, this fact is recognized by only half of the surveyed doctors (31.6% - 55.6%  $p = 0.35$ ).

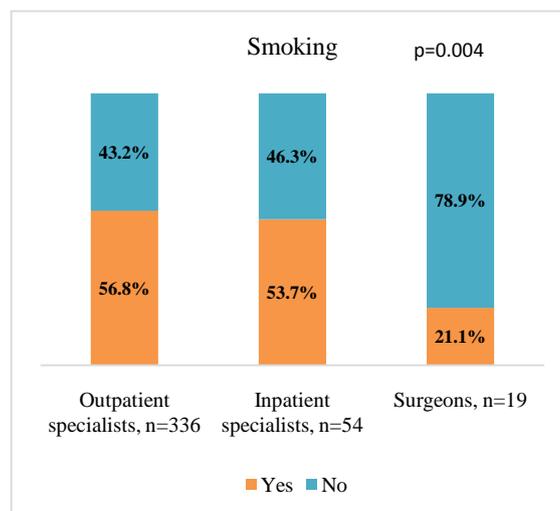
All the interviewed doctors (98.1% - 100%) among etiological factors noted alcohol to be the most common cause of CP development,  $p = 0.840$ . According to the literature reviewed, alcohol abuse significantly contributes to the risk level increase, regardless of the type of alcohol used for both sexes. [15]. However, smoking is not perceived by the doctors as an etiologic factor: only 21.1% of surgeons, 53.7% hospital doctors and 56.8% (  $p = 0.09$ ) noted smoking as a pancreas damaging factor, **Figures 1(a), Figures 1(b)** [16] [17].

### ***Clinical manifestations.***

Despite the fact that dyspeptic manifestations do not belong to the typical signs of CP, the overwhelming number of the doctors noted the nausea-vomiting as the main clinical symptom (89.5% - 90.8%,  $p = 0.688$ ), **Table 3** [18].



(a)



(b)

**Figure 1.** Experts opinion on risk factors of chronic pancreatitis: (a) alcohol, (b) smoking.

**Table 3.** The most frequent symptoms of chronic pancreatitis (specialists opinion).

Symptoms that occur in patients with CP, according to the doctors view	Doctors, n (%)			P
	Outpatient, n = 336	Hospitals, n = 54	Surgeons, n = 19	
Abdominal pain	321 (95.5)	51 (94.4)	19 (100)	0.867
Nausea-vomiting	305 (90.8)	47 (87)	17 (89.5)	0.688
Maldigestion. malnutrition	180 (53.6)	36 (66.7)	11 (57.9)	0.194
Diarrhea	200 (59.5)	38 (70.4)	6 (31.6)	0.012
Weigh loss	202 (60.1)	32 (59.3)	3 (15.8)	0.005
Hyperglycemia	110 (32.7)	21 (38.9)	4 (21.1)	0.353
«red droplets»	118 (35.1)	33 (61.1)	5 (26.3)	0.001
Grott's symptom	42 (12.5)	16 (29.6)	3 (15.8)	0.016
Jaundice	58 (17.3)	11 (20.4)	3 (15.8)	0.967
Pallor of the skin	103 (30.7)	7 (13)	3 (15.8)	0.061
Bloating	265 (78.9)	41 (75.9)	13 (68.4)	0.827

Pain, as the most frequent sign of CP, was named by all respondents (94% - 100%,  $p = 0.867$ ) [13]. At the same time, in general, such symptoms as diarrhea/steatorrhea (noted in 31.6% by surgeons, in 59.5% by outpatient and in 70.9% by inpatient doctors,  $p = 0.012$ ) and weight loss (15.8% by surgeons, 59, 3%, by hospital doctors, 59.8%, by ambulatory doctors,  $p = 0.005$ ) are ignored by doctors. A little more often doctors paid attention to presentation with bloating (68.4% of surgeons, 75.9% of inpatient and 78.6% of outpatient specialists,  $p = 0.827$ ) [19].

#### 4. Diagnostics

**Laboratory tests.** The long-established fact is the low sensitivity of serum amylase and lipase (only 10%) with high specificity (90% - 95%) of these pancreatic enzymes for the diagnosis of chronic pancreatitis [19]. Nevertheless, most of the interviewed specialists (86.6% - 94.7% of the doctors,  $p = 0.545$ ) noted this method as a criterion for CP diagnosis.

**Diagnosis of maldigestion.** Since chronic pancreatitis cannot be diagnosed based on routine laboratory tests, markers of digestion disorders (malnutrition) can be determined in patients with exocrine insufficiency manifestation [19] based on hemoglobin, prealbumin, liposoluble vitamins, magnesium and zinc tests. All these tests are not taken into account by the specialists: anemic syndrome is not noted by surgeons (0%); however, it is mentioned by outpatient and inpatient physicians in 16.7% - 17.39%,  $p = 0.095$ . The non-invasive method for determining the exocrine pancreas insufficiency, faecal elastase, is not a specific marker either, though it can be used as a screening method, but doctors are

not aware of this (31.6% of surgeons, 39.6% of the ambulatory physicians and 59, 3% of the hospital doctors,  $p = 0.016$ ).

**Instrumental diagnostics (methods of transverse visualization).** The most commonly used imaging methods include ERCPG, US (ultrasound screening) of abdominal organs, EndoUS, MRI and CT. EndoUS and ERCPG excel other methods of medical imaging, while US is the least accurate. [2]. However, 73.7% - 81.8% of any profile physicians are guided by ultrasound data,  $p = 0.673$ . While endoUS is not prescribed by the surgeons for diagnostic purpose (0%), and in rare cases is requested by the ambulatory and hospital physicians, 33.9% and 40.7%, respectively,  $p = 0.782$ . CT without contrast enhancement is used more often (46.4% - 68.4%,  $p = 0.124$ ) compared to intravenous bolus contrast enhancement (15.8% - 42.1%,  $p = 0.061$ ).

Inadequate awareness of most of the doctors about the information value of the above-mentioned methods is confirmed by the lack of complaints about the shortage of diagnostic methods or their low availability: 44.6% - 57.9%,  $p = 0.470$  of the doctors are satisfied with the set of diagnostic methods. However, in routine practice, mainly less accurate methods are used or those with insufficient evidence base **Table 4**.

**CP complications.** When the doctors were asked about the causes of high incidence of complicated CP forms, the following reasons were listed: inadequate examination of patients (52.6% - 62.1%,  $p = 0.501$ ), late recourse of patients for medical assistance (85.1% - 89.3%,  $p = 0.461$ ), non-compliance with diet and treatment recommendations (68.9% - 83.4%,  $p = 0.219$ ).

**Table 4.** Diagnostic methods used in practice and those availabilities.

Laboratory and instrumental tests	Doctors, n (%)			P
	Outpatient, n = 336	Hospitals, n = 54	Surgeons, n = 19	
blood amylase/lipase	291 (86.6)	48 (88.9)	18 (94.7)	0.545
coprogram	221 (65.8)	36 (66.7)	7 (36.8)	0.135
glucose tolerance test	102 (30.4)	22 (40.7)	3 (15.8)	0.105
fecal elastase	133 (39.6)	32 (59.3)	6 (31.6)	0.016
tumor markers	39 (16.1)	10 (19)	4 (12)	0.477
availability of lab methods	161 (27.5)	19 (44)	12 (14)	0.111
CT	81.8 (15.6)	81.5 (29)	73.7 (13)	0.637
CT with intravenous contrast	53 (15.8)	9 (16.7)	8 (42.1)	0.061
MRI	114 (33.9)	22 (40.7)	5 (26.3)	0.782
MRCP	70 (20.8)	13 (24.1)	2 (10.5)	0.456
endoEUS	24 (7.1)	1 (1.9)	0 (0)	0.433
availability of instrumental diagnostic methods	150 (44.6)	25 (46.3)	11 (57.9)	0.47

## 5. Discussion

Unfortunately, it should be noted that the doctors do not know the key factors of the etiopathogenesis and progression of chronic pancreatitis. In the relation there are some difficulties in early diagnosis of this pathology in Kazakhstan, regardless of work experience or region of residence. Primary care physicians responsible for patient identification and follow-up are not well familiar with informative diagnostic methods. In addition, hospital doctors, when faced with patients, as a rule, during an exacerbation, ignores serious clinical manifestations, not insufficient utilize visualization methods.

Despite the fact that the doctors often encounter complicated forms of CP, the fact of insufficient use (inaccessibility) of diagnostic techniques is not recognized by them. The specialists consider that the reasons of the widespread prevalence of complications are not related to healthcare but to a patient: late recourse for the medical assistance or lack of commitment.

Thus, inadequate specialists' awareness and a lack of access to informative diagnostic methods may result in a great number of complications in chronic pancreatitis.

## 6. Conclusion

This study aims to understand the causes of inadequate management for chronic pancreatitis. We have identified some key gaps and barriers in early diagnosis and subsequent follow-up, requiring development and implementation, further educational and organizational measures in practical health care.

## 7. Limitations

It is well known that even a high level of evidence for some recommendations does not guarantee their reproducibility in clinical practice. That is why necessary to develop and implement tools to standardize the decision-making process of clinicians and assess their impact on patients.

## Fund

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## Abbreviations

CP: Chronic Pancreatitis; MARS: molecular adsorption recycling system; CT: computer tomography; MRI: magnetic resonance tomography; ERCP: endoscopic retrograde cholangiopancreatography; EndoUS: endoscopic ultrasonography; US: ultrasound screening.

## Application

### Dear participants!

The Research Institute of Cardiology and Internal Disease of the Ministry of Health of the Republic of Kazakhstan conducts a study on the awareness of doctors regarding the proper diagnosis and treatment of chronic pancreatitis

Local ethical approval protocol No. 4 dated 09.21.2016

Please, fill out our questionnaire underline or add the selected answers.

### 1) What region are you from?

- a) Almaty and region
- b) Astana (Nur-Sultan) and Akmola region
- c) Aktobe region (West Kazakhstan)
- d) Semey and Ust-Kaman (East Kazakhstan region)
- e) Shimkent (South Kazakhstan region)

### 2) Your age

- a) 23 - 30 years old
- b) 31 - 40 years old
- c) 41 - 50 years
- d) 51 - 60 years old
- e) 61 - 70 years old
- f) 70 and older

### 3) Your gender - male/female

### 4) You work in a city/village

### 5) Your specialty

- a) general practitioner
- b) therapist at the clinic
- c) a surgeon in a polyclinic
- d) a therapist in a hospital
- e) gastroenterologist
- f) a surgeon in a hospital

### 6) Working experience

- a) less than 5 years
- b) 5 - 10 years
- c) 11 - 15 years old
- d) 16 - 20 years old
- e) 21 - 25 years old
- f) more than 25 years

### 7) Medical category

- a) no category
- b) second category
- c) first category
- d) the highest category

**8) Academic degree**

- a) no degree
- b) candidate of medical sciences
- c) Doctor of medical Sciences
- d) Master of Medicine or Healthcare

**9) How many patients do you see in one working day? (please add the answer) \_\_\_\_\_**

10) How often do patients with chronic pancreatitis come to see you?

- a) several patients a day
- b) 1 patient per day
- c) several patients per week
- d) 1 patient per week
- e) 1 patient per month

**11) What etiological factors of chronic pancreatitis do you know? (several correct answers)**

- a) alcohol
- b) smoking tobacco
- c) hypercalcemia
- d) hyperparathyroidism
- e) chronic renal failure
- f) medicines
- g) toxins
- h) idiopathic pancreatitis
- i) autoimmune pancreatitis
- j) genetic factors
- k) gallstone disease

**12) Remember, on the basis of what clinical signs do you define chronic pancreatitis? (several correct answers)**

- a) abdominal pain
- b) nausea, vomiting
- c) symptoms of maldigestion and malabsorption
- d) polyfecal
- e) the loss of weight
- f) symptoms of hyperglycemia.
- g) the symptom of “red droplets”
- h) Grott’s symptom
- i) jaundice
- j) pallor of the skin
- k) flatulence

**13) What laboratory tests do you use to confirm the presumptive diagnosis of chronic pancreatitis? (several correct answers)**

- a) general clinical blood test
- b) urinalysis
- c) biochemical blood test
- d) determination of levels of amylase, lipase in the blood
- e) scatological research
- f) glucose tolerance test
- g) determination of elastase 1 feces
- h) study of tumor markers (CA 19-9, CEA)

**14) Are all methods of laboratory diagnosis of chronic pancreatitis available to you and your patients?**

- a) yes
- b) no (add methods that you think are not available)

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c) I find it difficult to answer

**15) What changes in the general blood count can be seen in chronic pancreatitis? (several correct answers)**

- a) an increase in the number of leukocytes, an increase in ESR
- b) hyperchromic, macrocytic anemia
- c) hypochromic anemia
- d) eosinophilia
- e) thrombocytopenia

**16) What changes in the general analysis of urine can be seen in chronic pancreatitis?**

- a) proteins in urine
- b) amylase in urine
- c) glucose in urine
- d) erythrocytes in urine
- e) none

**17) What is the purpose of a scatological examination in case of suspected chronic pancreatitis?**

- a) in order to determine the state of exocrine insufficiency
- b) in order to determine the state of intrasecretory insufficiency
- c) I don't know

**18) What instrumental methods do you use to clarify the diagnosis of chronic pancreatitis? (several correct answers)**

- a) plain radiography of the abdominal cavity
- b) ultrasound examination (ultrasound)
- c) computed tomography (CT)
- d) CT with intravenous bolus contrast
- e) magnetic resonance imaging (MRI)
- f) MR-cholangiopancreatography

- g) endoscopic retrograde cholangiopancreatography
- h) endosonography

**19) Are all methods of instrumental diagnostics of chronic pancreatitis available for you and your patients?**

- a) yes
  - b) no (add methods that you think are not available)
- 

c) I find it difficult to answer

**20) What diseases is differential diagnosis of chronic pancreatitis carried out with? (several correct answers)**

- a) peptic ulcer of the stomach and duodenum
- b) myocardial infarction
- c) pancreatic cancer
- d) cholecystitis
- e) chronic colitis
- f) intestinal tuberculosis

**21) What treatments do you use for chronic pancreatitis?**

- a) quitting alcohol and smoking
- b) hunger and alkaline food
- c) medical nutrition - table number 5
- d) myotropic spasmolytics
- e) non-steroidal anti-inflammatory drugs
- f) proton pump inhibitors
- g) histamine H2 receptor blockers
- h) preparations based on pancreatic enzymes with enteric-soluble mini-microspheres, sensitive to pH value, and high lipase content
- i) preparations based on pancreatic enzymes with enteric-coated mini-tablets
- j) other preparations based on pancreatic enzymes
- k) antibiotics
- l) anti-enzyme drugs contrikal, gordox, etc.
- m) somatotropin analogue octreotide
- n) fat-soluble vitamins (A, D, E, K), as well as group B

**22) Are all treatments for chronic pancreatitis available to patients?**

- a) yes
  - b) no (add methods that you think are not available)
- 

c) I am at a loss to answer

**23) What, in your opinion, are the indications for hospitalization of patients with chronic pancreatitis in a hospital? (several correct answers)**

- a) recurrent abdominal pain syndrome, not controlled on an outpatient basis
- b) growing trophological insufficiency
- c) the appearance of signs of a complicated course
- d) lack of effect from outpatient therapy
- e) other (specify) \_\_\_\_\_

**24) Is there a problem with hospitalization of patients with chronic pancreatitis?**

- a) yes
- b) no
- c) I find it difficult to answer

**25) How often, in your opinion, are under-examined patients with chronic pancreatitis**

- a) often
- b) rarely
- c) I find it difficult to answer

**26) What do you think is the reason for the under-examination of patients with chronic pancreatitis? (multiple answers)**

- a) inaccessibility of all methods of laboratory diagnostics
- b) inaccessibility of all methods of instrumental diagnostics
- c) low awareness and knowledge of doctors
- d) lack of uniform diagnostic standards
- e) insufficient time allocated for 1 patient in primary care
- f) the behavior of patients, not showing up for the next appointment, etc.
- g) other (specify) \_\_\_\_\_

**27) Is chronic pancreatitis often overdiagnosed?**

- a) often
- b) rarely
- c) I find it difficult to answer

**28) What do you think is the reason for the overdiagnosis of chronic pancreatitis? (multiple answers)**

- a) with the unpreparedness of primary care physicians and ultrasound specialists, in their ignorance of the criteria for diagnosing CP
- b) childhood and adolescence of patients
- c) the presence of many comorbidities
- d) lack of uniform diagnostic standards
- e) insufficient time allocated for 1 patient in primary care
- f) other (specify) \_\_\_\_\_

**29) How do you assess the effectiveness of chronic pancreatitis treatment? (several correct answers)**

- a) changes in the clinical picture, elimination of pain and dyspeptic disorders
- b) changes in the picture of ultrasound
- c) normalization of laboratory tests
- d) improving the quality of life
- e) other (specify) \_\_\_\_\_

**30) What, in your opinion, are the indications for surgical treatment of patients with chronic pancreatitis?**

- a) unstoppable pain that cannot be eliminated by drug therapy
- b) concomitant gallstone disease

- c) tumors and cysts of the pancreas
- d) hyperenzymemia
- e) other (specify) \_\_\_\_\_

**31) Do complicated forms of chronic pancreatitis often occur?**

- a) often
- b) rarely
- c) I find it difficult to answer

**32) What do you think is the reason for the complications of chronic pancreatitis? (multiple answers)**

- a) late treatment of patients
- b) insufficient examination of patients
- c) contravention of treatment by patients, contravention of diet, drug intake
- d) low awareness of health care professionals
- e) insufficient time allocated for 1 patient in primary care
- f) other (specify) \_\_\_\_\_

**33) Who, in your opinion, should inform patients about the prevention, diagnosis, treatment and complications of chronic pancreatitis? (multiple answers)**

- a) attending physicians
- b) paramedics
- c) media
- d) Centers for a healthy lifestyle
- e) others (specify) \_\_\_\_\_

**34) How do you raise your awareness of chronic pancreatitis? (multiple answers)**

- a) I read Kazakhstan guideline for diagnosis and treatment
- b) foreign clinical guidelines and recommendations
- c) specialized magazines
- d) via the Internet
- e) information from a medical representative
- f) materials of conferences and seminars
- g) specialized refresher courses

**Thank you for your time !!!!**