

Chronic pancreatitis: Pharmacotherapy, prescription of drugs, meta-analysis, latest digital medical technologies of quantum medicine

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SUMMARY

Introduction: Chronic pancreatitis is a progressive inflammatory disease of the pancreas characterized by irreversible morphological changes, chronic pain, exocrine and endocrine insufficiency, and significantly reduced quality of life. Its incidence is increasing worldwide due to environmental, behavioral, and socioeconomic factors. There is a pressing need for evidence-based, accessible, and standardized pharmacotherapy protocols. The study aimed to manage and optimize pharmacotherapy for chronic pancreatitis through meta-analysis and explore the potential of digital quantum medical technologies. **Methodology:** A systematic review of international and national scientific literature was performed using databases such as PubMed, Embase, and the Cochrane Library. Clinical protocols from the EU, France, Kazakhstan, and Ukraine were included. A multivariate meta-analysis was conducted in STATA 13, guided by SMART objectives. Surveys of healthcare providers were conducted in multiple Ukrainian regions, and 77 anonymized patient medical records were analyzed. Medicines were categorized by international non-proprietary names (INNs) and assessed by two key criteria: "Recognition" (presence in clinical protocols) and "Availability" (presence in regulatory and price documents). Additional methodological approaches included normative, documentary, bibliographic, mathematical, and legal analyses. **Results and Discussion:** A total of 46 INNs were identified for use in chronic pancreatitis pharmacotherapy. Only two drugs—Drotaverine and Ibuprofen—achieved the highest combined scores for recognition and availability across all evaluated systems. Enzyme preparations, analgesics, NSAIDs, proton pump inhibitors, and vitamins were also widely used. The study confirms the need for personalized, evidence-based prescribing to improve patient access and optimize outcomes. Additionally, the paper discusses the prospective role of quantum medicine—particularly microwave resonance therapy—as a supplementary digital technology to enhance treatment quality by targeting the body's electromagnetic field. **Conclusion:** The meta-analysis enabled the structured evaluation of pharmacotherapy for chronic pancreatitis based on recognition and availability criteria. The findings support better regulation, economic efficiency, and improved patient outcomes through optimized prescribing

practices. The potential of quantum medicine technologies offers a novel frontier for enhancing care quality, diagnostics, and long-term management strategies in chronic pancreatitis.

Keywords: Chronic pancreatitis; pharmacotherapy; drugs; meta-analysis; quantum medicine; quantum pharmacy; microwave resonance therapy

RESUMEN

Pancreatitis crónica: Farmacoterapia, prescripción de fármacos, metaanálisis, últimas tecnologías médicas digitales de la medicina cuántica

Introducción: La pancreatitis crónica es una enfermedad inflamatoria progresiva del páncreas que se caracteriza por cambios morfológicos irreversibles, dolor crónico, insuficiencia exocrina y endocrina, y una reducción significativa de la calidad de vida. Su incidencia está aumentando a nivel mundial debido a factores ambientales, conductuales y socioeconómicos. Existe una necesidad apremiante de protocolos farmacoterapéuticos basados en la evidencia, accesibles y estandarizados. El estudio tuvo como objetivo gestionar y optimizar la farmacoterapia para la pancreatitis crónica mediante un metaanálisis y explorar el potencial de las tecnologías médicas cuánticas digitales. **Metodología:** Se realizó una revisión sistemática de la literatura científica internacional y nacional utilizando bases de datos como PubMed, Embase y la Biblioteca Cochrane. Se incluyeron protocolos clínicos de la UE, Francia, Kazajistán y Ucrania. Se realizó un metaanálisis multivariante en STATA 13, guiado por objetivos SMART. Se realizaron encuestas a profesionales sanitarios en varias regiones de Ucrania y se analizaron 77 historiales médicos anónimos de pacientes. Los medicamentos se clasificaron según sus denominaciones comunes internacionales (DCI) y se evaluaron según dos criterios clave: reconocimiento (presencia en protocolos clínicos) y disponibilidad (presencia en documentos regulatorios y de precios). Otros enfoques metodológicos incluyeron análisis normativos, documentales, bibliográficos, matemáticos y legales. **Resultados y discusión:** Se identificaron 46 DCI para su uso en la farmacoterapia de la pancreatitis crónica. Solo dos fármacos (drotaverina e ibuprofeno) obtuvieron las puntuaciones combinadas más altas en reconocimiento y disponibilidad en todos los sistemas evaluados. Las preparaciones enzimáticas, los analgésicos, los AINE, los inhibidores de la bomba de protones y las vitaminas también se utilizaron ampliamente. El estudio confirma la necesidad de una prescripción personalizada y basada en la evidencia para mejorar el acceso de los pacientes y optimizar los resultados. Además, el artículo analiza el papel potencial de la medicina cuántica, en particular la terapia de resonancia de microondas, como tecnología digital complementaria para mejorar la calidad del tratamiento mediante la focalización del campo electromagnético corporal. **Conclusión:** El metaanálisis permitió la evaluación estructurada de la farmacoterapia para la pancreatitis crónica con base en criterios de reconocimiento y disponibilidad. Los hallazgos respaldan una mejor regulación, la eficiencia económica y mejores resultados para los pacientes mediante prácticas de prescripción optimizadas. El potencial de las tecnologías de la medicina cuántica ofrece una nueva frontera para mejorar la calidad de la atención, el diagnóstico y las estrategias de manejo a largo plazo en la pancreatitis crónica.

Palabras clave: Pancreatitis crónica; farmacoterapia; fármacos; metaanálisis; medicina cuántica; farmacia cuántica; terapia de resonancia de microondas

RESUMO

Pancreatite crônica: Farmacoterapia, prescrição de medicamentos, meta-análise, as mais recentes tecnologias médicas digitais da medicina quântica

Introdução: A pancreatite crônica é uma doença inflamatória progressiva do pâncreas, caracterizada por alterações morfológicas irreversíveis, dor crônica, insuficiência exócrina e endócrina e redução significativa da qualidade de vida. Sua incidência está aumentando em todo o mundo devido a fatores

ambientais, comportamentais e socioeconômicos. Há uma necessidade urgente de protocolos farmacoterapêuticos baseados em evidências, acessíveis e padronizados. O estudo teve como objetivo gerenciar e otimizar a farmacoterapia para pancreatite crônica por meio de meta-análise e explorar o potencial das tecnologias médicas quânticas digitais. **Metodologia:** Foi realizada uma revisão sistemática da literatura científica internacional e nacional utilizando bases de dados como PubMed, Embase e Biblioteca Cochrane. Protocolos clínicos da UE, França, Cazaquistão e Ucrânia foram incluídos. Uma meta-análise multivariada foi conduzida no STATA 13, guiada pelos objetivos SMART. Pesquisas com profissionais de saúde foram conduzidas em diversas regiões ucranianas, e 77 prontuários médicos anonimizados de pacientes foram analisados. Os medicamentos foram categorizados por nomes não proprietários internacionais (DCIs) e avaliados por dois critérios principais: "Reconhecimento" (presença em protocolos clínicos) e "Disponibilidade" (presença em documentos regulatórios e de preços). Abordagens metodológicas adicionais incluíram análises normativas, documentais, bibliográficas, matemáticas e jurídicas. **Resultados e Discussão:** Um total de 46 DCIs foram identificados para uso na farmacoterapia da pancreatite crônica. Apenas dois medicamentos — Drotaverina e Ibuprofeno — alcançaram as maiores pontuações combinadas de reconhecimento e disponibilidade em todos os sistemas avaliados. Preparações enzimáticas, analgésicos, AINEs, inibidores da bomba de prótons e vitaminas também foram amplamente utilizados. O estudo confirma a necessidade de prescrição personalizada e baseada em evidências para melhorar o acesso do paciente e otimizar os resultados. Além disso, o artigo discute o papel prospectivo da medicina quântica — particularmente a terapia por ressonância de micro-ondas — como uma tecnologia digital suplementar para aprimorar a qualidade do tratamento, direcionando-se ao campo eletromagnético do corpo. **Conclusão:** A meta-análise permitiu a avaliação estruturada da farmacoterapia para pancreatite crônica com base em critérios de reconhecimento e disponibilidade. Os resultados corroboram uma melhor regulamentação, eficiência econômica e melhores resultados para os pacientes por meio de práticas de prescrição otimizadas. O potencial das tecnologias da medicina quântica oferece uma nova fronteira para aprimorar a qualidade do atendimento, o diagnóstico e as estratégias de manejo a longo prazo na pancreatite crônica.

Palavras-chave: Pancreatite crônica; farmacoterapia; medicamentos; meta-análise; medicina quântica; farmácia quântica; terapia por ressonância de micro-ondas

1. INTRODUCTION

Today, the incidence of chronic pancreatitis is increasing all over the world. In the general structure of diseases of the digestive organs, chronic pancreatitis ranks 3rd among all pathologies of the gastrointestinal tract [1]. Increasing influence of adverse factors of the external environment, armed conflicts, increasing medical and pharmaceutical burden, use of psychoactive substances, alcohol, decrease in quality of nutrition and general standard of living are etiological risk factors of chronic pancreatitis. People over 45 years of age usually get sick, although in the last few years there is a trend of "rejuvenation" of the disease. In Ukraine, over the last decade, pancreatitis occurs 3 times more often in young people and adolescents than before. Chronic pancreatitis is dangerous due to its complications. In the first 10 years, about 20% of patients die from complications, and within 20 years – 50% [2].

Publications on the diagnosis and management of acute pancreatitis were found among pancreatitis [3]. The incidence of acute pancreatitis is also increasing. Over the past 10 years, hospitalization due to pancreatitis has increased by at least 15% [4]. A severe form of acute pancreatitis covers approximately 20–30% of patients, is a life-threatening disease with a hospital mortality rate of about 15 [5]. Understanding the pathophysiology of pancreatitis pro-

vides an opportunity to expand the methods of pharmacotherapy [6]. Further recommendations for the diagnosis and treatment of acute pancreatitis were made in China [7]. Optimizing the safety of patients with acute pancreatitis has been studied with the use of opioids [8].

Recurrent acute pancreatitis can lead to the development of chronic pancreatitis. Current world data show an increase in the number of patients with chronic pancreatitis. The results of the research concerning the pharmacotherapy of patients with chronic pancreatitis with comorbidity from the pharmacological point of view were described earlier [9]. Chronic pancreatitis is a chronic inflammatory disease of the pancreas, which is accompanied by irreversible structural changes in the development of excretory and incretory insufficiency, manifested by abdominal pain and characterized by a significant reduction in the quality of life of patients [10].

Chronic pancreatitis is a persistent inflammatory disease leading to irreversible morphological changes in the pancreas, progressive functional decline, and significant impact on patients' quality of life. Traditional diagnostic and therapeutic approaches often fall short in fully elucidating the pathogenesis and managing long-term outcomes. In this context, quantum medicine—based on quantum field theory principles—offers novel perspectives by considering the bioresonance properties of biological tissues, energetic imbalances, and the possibility of early preclinical detection and modulation of disease processes. The integration of quantum diagnostics and therapeutic modalities into the management of chronic pancreatitis provides a potentially transformative framework for individualized, non-invasive interventions aimed at harmonizing systemic function and cellular communication.

The use of meta-analysis was carried out to evaluate the appointment of antibiotics and protease inhibitors in acute pancreatitis [11, 12]. In addition, a meta-analysis was conducted in the treatment of alcoholic hepatitis. The results of the meta-analysis were recommended for doctors providing primary, secondary (specialized) medical care [13]. To continue research, the purpose of this study is the management of pharmacotherapy of chronic pancreatitis with the use of meta-analysis, prospects for using the latest digital medical technologies of quantum medicine.

2. METHODOLOGY

The work uses sources of scientific literature using the keywords "pancreatitis", "chronic pancreatitis", "acute pancreatitis", "alcoholic pancreatitis", "treatment", "pharmacotherapy", "drugs", "treatment protocols", "the latest digital medical technologies of quantum medicine" in PubMed, Embase, Cochrane Library, open electronic databases of specialized journals, publications of conferences, professional associations. The search strategy was based on the combination of terms for chronic pancreatitis with a variant of the arbitrary text. In addition, lists of literary sources of all suitable articles and modern systematic reviews were considered. A meta-analysis of the prescription of drugs in the treatment of chronic pancreatitis was conducted according to the principles of evidence-based medicine and evidence-based pharmacy (quality, safety, economy, accessibility). Conducting a meta-analysis to study direct and indirect comparisons of International non-proprietary names of medicines in the management of pharmacotherapy of chronic pancreatitis was conducted using a multivariate meta-analysis model with statistical software STATA 13 (StataCorp. College Station, Texas, USA). A recent update to the multivariate meta-analysis procedure in STATA enables network meta-analysis to be performed in commonly used meta-analysis software. The author's personalized approaches for SMART objectives of meta-analysis: specific (concrete), measurable, verifiable,

acceptable, realistic, timely were used [13]. The selection of countries of the world and evidentiary information of clinical protocols was made objectively with the help of the computer program "dilovodstvo" of the automated document management system, which was developed by the Department of Informatization of Courts and Judicial Statistics of the Council of Judges of Ukraine. EU countries, France, Kazakhstan, and Ukraine were selected for this program. For these countries, the authors administered regulatory documents, evidence-based clinical guidelines, unified clinical protocols, and treatment standards [14-18]. The information base of the study consisted of scientific works of foreign and domestic scientists on the topic of the article. The review of scientific sources of literature was carried out considering the recommendations of the Cochrane Society for PICO: P (population) – the population suffering from chronic pancreatitis; I (intervention) – pharmacotherapy, administration of effective, safe, affordable medicines; C (comparator) – research technology; O (outcomes) – research results. The analysis based on production was performed with the determination of the share of domestic and foreign drugs, by individual countries, manufacturing companies. Drugs clinical and pharmacological groups for pharmacotherapy of chronic pancreatitis with diagnostic codes ATC – Classification (ATC) were selected [19]. International and national medical and technological documents on standardization of medical care of chronic pancreatitis, as well as scientific sources were used for regulatory, documentary and pharmacoeconomic analysis. Clinical protocols and international treatment standards were considered. Diagnostic codes and criteria were analyzed: K86.0; K86.1 – International Classification of Diseases of 10th edition; DS31; DC32 – International Classification of Diseases of 11th edition; D99 – International Classification of Primary Care-2 (ICPC-2). The names of medicines were systematized by International non-proprietary name (INN), trade names, the number of medicines, dosage forms. All drugs were registered in the State Register of drugs of Ukraine as of June 2024. The current research was carried out using the system approach during 2020–2024. The survey of doctors was conducted in hospitals and polyclinics of the Rivne, Kharkiv, Kyiv, and Kirovohrad regions of Ukraine. At the same time, the anonymous analysis of medical cards of patients with chronic pancreatitis was carried out (77 medical cards). Medicines for the management of the pharmacotherapy of chronic pancreatitis are systematized. The experimental study was conducted on the clinical bases of Kharkiv Medical Academy of Postgraduate Education, Lviv Medical University, Luhansk State Medical University (hospitals, pharmacies), Department of Medical and Pharmaceutical Law, General and Clinical Pharmacy of Kharkiv Medical Academy of Postgraduate Education, and Department of Pharmacy of Luhansk State Medical University, European Academy of Digital Medical Technologies "Re-Generation" Center (Kyiv, Ukraine).

In parallel with the meta-analysis, modern research methods were also used clinical and pharmacological, normative and legal, documentary, bibliographic, systemic, comparative, marketing, graphic, mathematical analysis. Mathematical processing and statistical evaluation of data was performed using Microsoft Excel. Inclusion criteria encompassed peer-reviewed articles published between 2010 and 2024, in English or Ukrainian, focusing on chronic pancreatitis, quantum medicine, bioresonance therapy, and related diagnostic or therapeutic modalities. Exclusion criteria included conference abstracts, editorial materials, animal studies, and papers lacking quantitative or clinical data. The databases consulted included PubMed, Scopus, Web of Science, and Google Scholar. Keywords used were: "chronic pancreatitis", "quantum medicine", "bioresonance therapy", "electromagnetic therapy", and "quantum diagnostics".

Two reviewers performed data extraction independently. Extracted data included study design, population characteristics, type of intervention, outcomes measured, and quality indicators. Discrepancies were resolved by consensus. The quality of included studies was assessed using the PRISMA guidelines and the GRADE framework.

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The design of the study was carried out according to the methodology developed by the authors of the article and is given in the Table 1.

Table 1. Design of the author's research methodology

No.	Stage	Type of work
1.	Regulatory and legal analysis of the evidence base of management in the pharmacotherapy of chronic pancreatitis in the countries of the world	Collection, systematization, and analysis of prescriptions of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis using the database of the Ministry of Health of Ukraine, MedElement, Duodecim Medical Publications Ltd
2.	Ranking of prescriptions of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis according to the "Recognition" criteria	Conducting a questionnaire of doctors to determine the specific share of prescriptions of International non-proprietary names of medicines according to the "Recognition" criteria
3.	Ranking of prescriptions of International non-proprietary names of medicines for pharmacotherapy of chronic pancreatitis according to the "Availability" criteria	Conducting a questionnaire of doctors to determine the percentage of prescriptions of International non-proprietary names of medicines according to the "Availability" criteria
4.	Determination of the average arithmetic value of the criteria "Recognition" and "Availability"	Systematization of the table 3 data considering the criteria "Recognition" and "Availability" in percentages and further calculation of the average arithmetic value
5.	Building a network of comparisons of International non-proprietary names of medicines in the pharmacotherapy of chronic	Conducting a meta-analysis for the analysis of direct and indirect comparisons of the International non-proprietary names of medicines in the pharma-

	pancreatitis considering the criteria "Recognition" and "Availability"	cotherapy of chronic pancreatitis using a multidimensional meta-analysis model with statistical software STATA 13
6.	Conclusions	Determination of conclusions based on comparison network analysis

3. RESULTS AND DISCUSSION

The diagnosis "chronic pancreatitis" is recommended to be used to define chronic inflammation of the pancreas with chronic, irreversible, inflammatory, and fibrotic changes in the pancreas. It often characterized by severe pain, which reduces the quality of life of patients. The diagnosis of chronic inflammation of the pancreas is confirmed based on the symptoms present in the patient. The results of imaging to determine the structure of the pancreas (ultrasound examination, computed tomography), exocrine and endocrine function tests were considered. Use of psychoactive substances, alcohol, and tobacco are significant factors in chronic pancreatitis [20].

Management during the differential diagnosis of chronic pancreatitis is carried out to prove the presence of this disease, to exclude other diseases that may be accompanied by similar complaints. Differential diagnosis of chronic pancreatitis is associated with the exclusion of disorders of the gastrointestinal tract, cardiovascular, reproductive system, and other disorders. Among disorders of the gastrointestinal tract, it is necessary to exclude acute pancreatitis, acute cholecystitis, gallstones, acute appendicitis, peptic ulcer, tumors of the pancreas, Crohn's disease, paresis of the stomach, nonspecific ulcerative colitis, irritable bowel syndrome. Among disorders of the cardiovascular system, it is necessary to exclude myocardial infarction, ischemic heart disease, and vascular thrombosis. Endometriosis, ectopic pregnancy, ovarian cyst, inflammation of the fallopian tubes, ovarian cancer should be excluded from the disorders of the reproductive system. At the same time, other disorders are excluded – urolithiasis, thoracic radiculopathy [15, 21, 22]. Clinical-pharmacological groups of drugs prescribed for pharmacotherapy of chronic pancreatitis are shown in the Table 2.

Table 2. Drugs based on evidence in the pharmacotherapy of chronic pancreatitis

No.	Clinical and pharmacological group	INNs
1.	Analgesics and antipyretics	Metamizole sodium, Paracetamol
2.	Analogues of somatostatin	Octreotide
3.	Antibacterial agents	Imipenem + Cilastatin, Meropenem, Metronidazole, Cefotaxime, Cefuroxime, Cefoperazone, Ceftriaxone, Ciprofloxacin
4.	Vitamins	Ergocalciferol, Menadione, Retinol, Tocopherol, Phytomenadione, combined vitamin preparations
5.	Proton pump inhibitors	Esomeprazole, Lansoprazole, Omeprazole, Pantoprazole, Rabeprazole
6.	Blood substitutes and perfusion solutions	Sorbitol + Sodium lactate + Sodium chloride + Calcium chloride + Potassium chloride + Magnesium chloride; Albumin; Glucose
7.	Nonsteroidal anti-inflammatory and antirheumatic drugs	Ibuprofen
8.	Opioid analgesics	Tramadol
9.	Enzyme preparations	Pancreatine
10.	Antispasmodics	Drotaverine, Mebeverine, Papaverine

At the next stage of the research, a normative and legal analysis of the evidence base of management in the pharmacotherapy of chronic pancreatitis among selected countries of the world was carried out. The list of evidence-prescribed drugs includes 46 International non-proprietary names of medicines (Table 3).

Table 3. Prescribing drugs in the pharmacotherapy of chronic pancreatitis

No.	INNs	Ukraine	Instruction No. 00209 EU	Kazakhstan	France
1.	Albumin	+			
2.	Alendronic acidum			+	
3.	Cefoperazone	+	+		
4.	Cefotaxime	+	+		
5.	Ceftriaxone	+	+		
6.	Cefuroxime	+	+		
7.	Ciprofloxacin	+	+		
8.	Diazepam			+	
9.	Drotaverine	+	+	+	+
10.	Ergocalciferol	+			
11.	Esomeprazole	+		+	
12.	Famotidine			+	
13.	Glucose	+	+		+
14.	Ibandronic acid			+	
15.	Ibuprofen	+	+	+	+
16.	Insulin		+		
17.	Ketoprofen			+	
18.	Ketorolac			+	
19.	Kolekaltsiferolum			+	
20.	Lansoprazole	+		+	
21.	Imipenem + Cilastatin	+	+		
22.	Mebeverine	+	+	+	+
23.	Menadione	+			
24.	Menadione sodium bisulfite			+	
25.	Meropenem	+	+		
26.	Metamizole sodium	+			
27.	Metronidazole	+	+		
28.	Morphine			+	
29.	Octreotide	+		+	
30.	Omeprazole	+		+	
31.	Pancreatine	+	+	+	+
32.	Pantoprazole	+		+	
33.	Paracetamol	+		+	
34.	Phytomenadione	+			
35.	Prednisolone			+	
36.	Pregabalin			+	
37.	Rabeprazole	+		+	
38.	Ranitidine			+	
39.	Retinol	+		+	

40.	Sorbitol + Sodium lactate + Sodium chloride + Calcium chloride + Potassium chloride + Magnesium chloride	+			
41.	Sulpiride			+	
42.	Teriparatide			+	
43.	Tocopherol	+		+	
44.	Tramadol	+		+	
45.	Zoledronic acid			+	
46.	Papaverine	+	+		+

Table 3 describes that the four drugs Drotaverine, Ibuprofen, Mebeverine, Pancreatine coincide when prescribed to patients in the management of pharmacotherapy of chronic pancreatitis in the EU countries, Ukraine, Kazakhstan, and France. Analgesics and antipyretics, opioid analgesics, nonsteroidal anti-inflammatory and antirheumatic drugs are used in effective doses with appropriate intervals considering contraindications. Invasive pain treatment is prescribed for patients with chronic pancreatitis when medical treatment is ineffective. Enzyme preparations, proton pump inhibitors are prescribed to patients with steatorrhea, lipid malabsorption, diarrhea, weight loss, or other clinical and laboratory signs of nutrient deficiency. Maintaining an adequate diet, correcting micronutrient deficiencies, using pancreatic enzymes, and treating pain showed a positive effect on the nutritional status of patients with chronic pancreatitis.

To carry out the next stage of the research regarding the ranking of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis according to the "Recognition" criteria, a questionnaire was conducted among doctors who provide medical assistance and prescribe pharmacotherapy to patients with chronic pancreatitis. Questionnaire questions are given in the Table 4.

Table 4. Questionnaire for doctors regarding the ranking of International non-proprietary names of medicines for pharmacotherapy of chronic pancreatitis according to the "Recognition" criteria

No.	Question	Answer, %
1.	In your opinion, how important is the information regarding International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in the evidence-based guidelines of the Ministry of Health of Ukraine	81 – very important 19 – mediocre 0 – not important
2.	In your opinion, how important is the presence of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in proven clinical protocols of MedElement	77 – very important 15 – mediocre 8 – not important
3.	In your opinion, how important is the presence of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in the evidence protocols of PNDs	69 – very important 10 – mediocre 21 – not important
4.	In your opinion, how important is the presence of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in the evidence-based guidelines of Duodecim Medical Publications Ltd EU	94 – very important 6 – mediocre 0 – not important

Thus, the respondents answered that the presence of International non-proprietary names of medicines in the evidence base for the pharmacotherapy of chronic pancreatitis is mostly very important for the management of prescriptions (range from 69% to 94%).

The next stage of the study regarding the ranking of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis according to the criteria "Availability" from the questions of the questionnaire is given in the Table 5.

Table 5. Questionnaire for doctors regarding the ranking of prescriptions of International non-proprietary names of medicines for pharmacotherapy of chronic pancreatitis according to the "Availability" criteria

No.	Question	Answer, %
1.	In your opinion, how important is the appointment of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in regulatory documents regarding the prices of drugs in the pharmaceutical supply of hospitals	72 – very important 22 – mediocre 6 – not important
2.	In your opinion, how important is the appointment of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in regulatory documents regarding the availability of prescription drugs for patients	90 – very important 10 – mediocre 0 – not important
3.	In your opinion, how important is the appointment of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in regulatory documents regarding the availability of over-the-counter drugs for patients	68 – very important 7 – mediocre 25 – not important

Respondents answered that the presence of prescription and over-the-counter International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis is mostly very important (range from 68% to 90%).

For the next stage of the research, the data in the Table 3 were systematized, considering the criteria "Recognition" and "Availability". An analysis of the use of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis in evidence-based protocols was carried out. The presence of the drug in one of the four treatment protocols was equal to 25.0% according to the "Recognition" criteria. To determine the percentage of the "Availability" criteria, the presence of International non-proprietary names of medicines for the pharmacotherapy of chronic pancreatitis in regulatory documents regarding the prices of drugs in the pharmaceutical supply of hospitals was checked; in regulatory documents regarding the availability of prescription drugs for patients; in regulatory documents regarding the availability of over-the-counter drugs for patients. Further, the average arithmetic value of the "Definiteness" and "Availability" criteria was calculated in percentages (Table 6).

Table 6. Determination of the average arithmetic value of the "Recognition" and "Availability" criteria

No.	INNs	Recognition, %	Availability, %	Arithmetic average value of the "Recognition" and "Availability" criteria, %
1.	Albumin	25.0	33.3	29.2
2.	Alendronic acidum	25.0	33.3	29.2
3.	Cefoperazone	50.0	33.3	41.7

4.	Cefotaxime	50.0	66.7	58.4
5.	Ceftriaxone	50.0	33.3	41.7
6.	Cefuroxime	50.0	33.3	41.7
7.	Ciprofloxacin	50.0	66.7	58.4
8.	Diazepam	25.0	66.7	45.9
9.	Drotaverine	100.0	100.0	100.0
10.	Ergocalciferol	25.0	66.7	45.9
11.	Esomeprazole	50.0	33.3	41.7
12.	Famotidine	25.0	33.3	29.2
13.	Glucose	75.0	33.3	54.2
14.	Ibandronic acid	25.0	66.7	45.9
15.	Ibuprofen	100.0	100.0	100.0
16.	Insulin	25.0	66.7	45.9
17.	Ketoprofen	25.0	33.3	29.2
18.	Ketorolac	25.0	33.3	29.2
19.	Kolekaltisferolum	25.0	0.0	12.5
20.	Lansoprazole	50.0	33.3	41.7
21.	Imipenem + Cilastatin	50.0	33.3	41.7
22.	Mebeverine	100.0	33.3	66.7
23.	Menadione	25.0	33.3	29.2
24.	Menadione sodium bisulfite	25.0	33.3	29.2
25.	Meropenem	50.0	66.7	58.4
26.	Metamizole sodium	25.0	100.0	62.5
27.	Metronidazole	50.0	100.0	75.0
28.	Morphine	25.0	66.7	45.9
29.	Octreotide	50.0	33.3	41.7
30.	Omeprazole	50.0	100.0	75.0
31.	Pancreatine	100.0	33.3	66.7
32.	Pantoprazole	50.0	66.7	58.4
33.	Paracetamol	50.0	100.0	75.0
34.	Phytomenadione	25.0	66.7	45.9
35.	Prednisolone	25.0	66.7	45.9
36.	Pregabalin	25.0	33.3	29.2
37.	Rabeprazole	50.0	0.0	25.0
38.	Ranitidine	25.0	66.7	45.9
39.	Retinol	50.0	33.3	41.7
40.	Sorbitol + Sodium lactate + Sodium chloride + Calcium chloride + Potassium chloride + Magnesium chloride	25.0	33.3	29.2
41.	Sulpiride	25.0	33.3	29.2
42.	Teriparatide	25.0	0.0	12.5
43.	Tocopherol	50.0	66.7	58.4
44.	Tramadol	50.0	33.3	41.7
45.	Zoledronic acid	25.0	66.7	45.9
46.	Papaverine	75.0	33.3	54.2

The next stage of the research was the construction of a comparison network of International non-proprietary names of medicines for pharmacotherapy of chronic pancreatitis, considering the criteria "Recognition" and "Availability". To do this, a meta-analysis was conducted to analyze direct and indirect comparisons of International non-proprietary names of medicines for

the management of pharmacotherapy of chronic pancreatitis using a multivariate meta-analysis model.

From the list of 43 drugs, two drugs – namely Drotaverine and Ibuprofen were substantiated with the help of meta-analysis. Only two drugs are associated with a significantly higher number of parameters of the prescription than other International non-proprietary names of medicines. At the same time, studies have shown that lifestyle modification, complete abstinence from the use of psychoactive substances, alcohol, tobacco, and increased physical activity contribute to improving the quality of life of patients with chronic pancreatitis.

Among the ways to find a solution to the problem, the authors explore the introduction of digital medical technologies of quantum medicine. Quantum medicine relies on the foundational principles of biophysical phenomena within living organisms. A primary technology within this field is microwave resonance therapy, which employs low-intensity electromagnetic radiation in the millimeter wavelength range. This radiation targets specific active points and zones of the human body, correcting disturbances in the body's electromagnetic framework. Consequently, it mitigates metabolic alterations triggered by these electromagnetic disruptions. The continuous advancement and proliferation of innovative scientific methods in quantum medicine offer significant opportunities for enhancing healthcare quality, clinical diagnostics, and therapeutic practices [23]. Research conducted within the European Union indicates that weak electromagnetic fields facilitate "communication" with human tissues and organs [24]. A conceptual model describes the human body as being enveloped by an electromagnetic "framework," holding essential data regarding its state and developmental status [25].

Several medical techniques rooted in quantum medicine principles include electrotherapy, electron therapy, laser therapy, proton therapy, plasma therapy, quantum therapy, frequency therapy, frequency wave therapy, electric field therapy, magnetic field therapy, bioresonance therapy, Pulsed Electromagnetic Field (PEMF) therapy, Electro-Capacitive Cancer Therapy (ECCT), oncological electromagnetic therapy, Tumor Treating Fields (TTF), radiofrequency therapy, and ultrahigh frequency therapy. All these therapeutic modalities leverage quantum mechanical concepts and quantum coherence as foundational elements in the expanding field of quantum medicine. Each application of quantum theory and related technology directly involves biological entities, focusing explicitly on their biological responses [26].

4. CONCLUSION

A meta-analysis of the prescription of drugs in the pharmacotherapy of chronic pancreatitis was conducted according to the author's design of the SMART study. Better organized the evidence base of International non-proprietary names of medicines according to the criteria "Recognition" and "Availability". Better systematized the ranking of International non-proprietary names of medicines in the pharmacotherapy of chronic pancreatitis according to the evidentiary data of regulatory documents. Economic impact study. Decrease of financial budget on health system according to drug prices in the pharmaceutical management of hospitals. Social impact research. Increase longevity and quality of life of patients with chronic pancreatitis. Pharmaceutical impact research. The digital tool of availability for patients of prescription and non-prescription drugs is used in fifteen hospitals, fourteen medical stakeholders. Better training of the end-users in long-term pharmacotherapy using Drotaverine, Ibuprofen. Medical impact research. Pathways of training programs on prevention of diseases of chronic pancreatitis and usage of digital tools increasing the access to up-to-date information of doctors

and patients. A few appropriate communications for dissemination and exploitation are planned in further studies with associations of producers, distributors, doctors, pharmacists, lawyers. Among the ways to find a solution to the problem, the authors explore the introduction of digital medical technologies of quantum medicine,

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CONFLICT OF INTEREST

The authors have approved the article for publication and declare that there is no conflict or potential conflict of interest.

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