Выводы

1. По причине отсутствия изменений относительно референтных величин показатели стандартной коагулограммы (АЧТВ, АФПК, ТВ) не рекомендуется использовать у пациентов с отморожениями.

2. Тесты ТЭМ являются более чувствительными для отражения гемостазиологических нарушений у пациентов с отморожениями. Перспективным является разработка алгоритмов интерпретации результатов ТЭМ для этой категории пациентов.

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УДК 617: [378.6:004.738.5]

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APPLICATION OF DECENTRALIZED KNOWLEDGE GRAPH FOR SURGICAL EDUCATION

Introduction

An effective approach to solving the problem of Big Data is the implementation of Knowledge Graph (KG) technology. This methodology facilitates the construction of a specialized semantic, contextual or relational graph model that captures the relationships between various entities and concepts [1, 2]. A Decentralized Knowledge Graph (DKG) is a distributed open structure on the blockchain for organizing, storing and exchanging structured knowledge between several participants or nodes [3]. The problem of analyzing big data and its application in the educational process is especially relevant in the field of medicine, with an emphasis on surgical education.

Goal

The aim of this study is to develop a DKG to improve the systematization of knowledge in the field of medicine and its implementation in the teaching of surgery at the Department of Surgical Diseases No. 3 of the Gomel State Medical University.

Material and Methods of research

The research into DKGs and their use in surgical education explores how decentralized systems can transform the way medical knowledge is shared and applied. The research utilizes a Cyb.ai platform, which is built on the Bostrom blockchain. Cyb.ai allow users to create "cyberlinks," search through data using graph-based methods, rank results based on relevance, and store and share information easily [4]. The Bostrom DKG is composed of pairs, wherein each "source particle" is connected to a "destination particle" through a "cyberlink," which encompasses supplementary information regarding the node's address and its weight (rank) [4, 5].

Cyb.ai offers a hunt interface that allows users to submit queries. When a query is entered, Cyb.ai calculates the Content Identifier (CID) for the text as Interplanetary File System (IPFS) hashes. The results generated by Cyb.ai consist of lines stored in IPFS, which are displayed as IPFS hashes. These lines are interconnected with the IPFS text hash that was input into the hunt interface [4, 5].

To provide information, the full title of the composition (the text of the intended document) or the educational material was added to the DKG, which then produced an IPFS hash for the specified element. Subsequently, a document containing the text of the educational material or composition in PDF format was linked to this hash using the "cyberlink" feature [4, 5].

We used the educational resources of the Department of Surgical Diseases No. 3 of the Gomel State Medical University, as well as the publications of the World Society of Emergency Surgery (WSES) published in the World Journal of Emergency Surgery, to upload to DKG.

The source code for Cyb.ai is accessible via GitHub at https://github.com/cybercongress/cyb, and comprehensive details regarding the protocol are openly available at https://docs.cyb.ai/.

The results of the research and their discussion

The result of our work was the creation of the DKG AI Medica Surgery-3. Access to the developed Knowledge Graph can be found at https://cyb.ai/@gsmu-by/brain. A screenshot of the computer screen with our DKG Surgery-3 is shown in Figure 1.

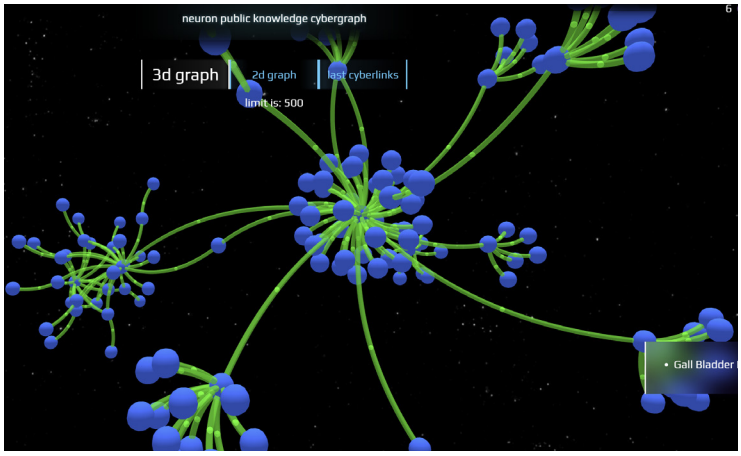

Figure 1 – Screenshot of DKG Surgery-3

The data collection and integration process were carried out by incorporating educational resources and full-text articles into the DKG system using relevant keywords.

The information about medical entities and their relationships is visually represented in either a 3D or 2D format. In this representation, nodes represent keywords and edges illustrate the relationships between them.

Figure 2 shows the loading of the Lecture "Acute Pancreatitis" when the cursor is placed on the region of interest.

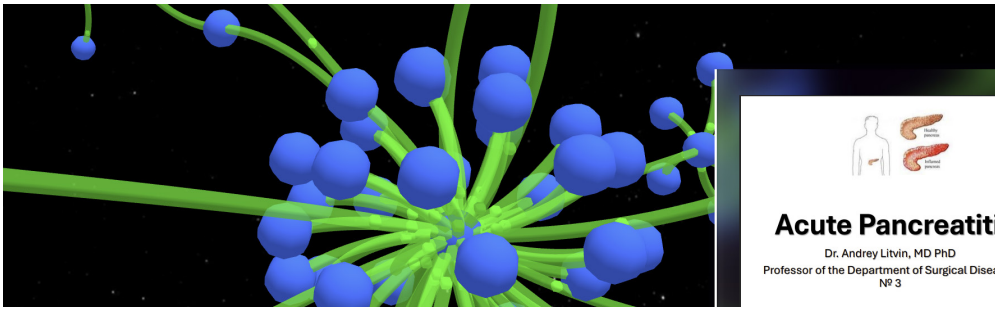

Figure 2 – An example of our DKG working on the topic Acute Pancreatitis

After the DKG was created, a testing phase was conducted. We confirmed that the developed DKG accurately represents the integrated information and currently supports the search for relevant educational resources and full-text articles in the field of surgery based on the keywords entered the search interface [https://cyb.ai/].

Conclusion

Decentralized Knowledge Graph is a new method of combining Big Data in medicine. The DKG we developed allows for better systematization of educational and methodological materials of the Department of Surgical Diseases No. 3 for organizing knowledge on surgery.

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УДК 616.366-089.97-06

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LONG-TERM EFFECTS OF CHOLECYSTECTOMY AND BETTER STRATEGIES FOR CHOLELITHIASIS MANAGEMENT

Introduction

Cholecystectomy, the surgical removal of the gallbladder, is the primary treatment for symptomatic gallstone disease (cholelithiasis), with over 700,000 procedures performed annually in the United States alone. While effective, up to 40% of patients experience persistent symptoms post-surgery, highlighting a significant clinical challenge. These long-term complications, including residual stones and sphincter of Oddi dysfunction, necessitate a deeper understanding of their causes and the development of improved management strategies.

Goal

To investigate the long-term complications of cholecystectomy, identify contributing risk factors, and evaluate advanced surgical and non-surgical strategies for managing cholelithiasis.

Material and methods of research

This study is based on a review of scientific literature from PubMed, Wiley Online Library, and PMC National Library of Medicine. Data analysis and generalization were employed to synthesize findings on post-cholecystectomy complications and treatment approaches.

The results of research and their discussion

Epidemiology and Pathophysiology: Cholecystectomy, though a common procedure, carries notable risks. Intraoperative complications occur in 13.1% of laparoscopic cases, with gallbladder perforation (5.27%) being the most frequent. Bile duct injuries, though rare (0.6%), are severe, often requiring complex repairs and leading to lasting morbidity. Postoperative issues include bleeding (3.64%), bile leaks (1.89%), and infections (0.94%), with a 3.91% conversion rate to open surgery when laparoscopic challenges arise.