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# FEATURES OF MEDICAL CORRECTION OF CHRONIC PANCREATITIS WITH GASTRIC HYPERACIDALITY SYNDROME AND OBESITY

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Chronic pancreatitis (CP) in terms of frequency, etiology and pathogenesis, severity of clinical course, difficulties in diagnosis and unsatisfactory treatment results occupies one of the leading places among a number of modern problems of diseases of the digestive system [1,2,3]. The complexity of the diagnosis deepens the existing obesity [4].

One of the main areas of treatment of chronic pancreatitis is the elimination of pain [5]. This occurs through various mechanisms, one of which is the suppression of the acid-forming function of the stomach, the exclusion of secretin stimulation of the exocrine function of the pancreas and thus giving it a "functional rest". This approach helps to reduce the autolysis of the parenchyma of the organ and the severity of enzyme intoxication, suppression of hyperenzymemia, reduce the risk of systemic complications of pancreatitis, steatosis of the pancreas and liver [6], even associated atherosclerotic complications [7], creating favorable conditions for the regeneration of pancreatic tissue, correction of metabolic disorders [8]. The use of proton pump inhibitors (PPIs) reduces the exocrine function of the pancreas, the production of pancreatic enzymes by inhibiting gastric secretion [9]. Today, the issue of "night breakthrough" of acidity and night fluctuations in application continues to be controversial.

The literature data on the functional state of the pancreas and gastroduodenal organs in CP with gastric hyperacidity syndrome are insufficient for the development of prevention methods, individualized approach to comprehensive treatment, in addition, this information is sometimes contradictory. This indicates the need for a more detailed study of this problem.

**Purpose** -to determine the features of diagnosis and rational outpatient treatment of patients with chronic pancreatitis depending on the level of acid production in the stomach.

**Material and methods of research.** 237 patients diagnosed with exacerbation of CP were examined. General clinical and general laboratory analysis, determination of blood alpha-amylase, quantitative coprological test for determination of human pancreatic elastase-1 were performed; intragastric express pH-metry, daily

monitoring of intragastric pH; gastroduodenoscopy, C13 respiratory urease test, ultrasound of the abdominal cavity.

Statistical methods were used to process digital materials obtained during the research (determination of average values, their errors, coefficients of multifactor correlation analysis).

**Results.** We have identified the characteristic (typical) parameters of postprandial alkalinization for patients with CP. These included the long-term nature of the alkalinization (within  $134.88 \pm 28.23$  minutes), the roundness of the shape of the deepening of the pH-gram curve during the tinning period. The depth of alkalinity depended on the degree of exocrine insufficiency. Calculated, we proposed, the rate of postprandial involvement according to a special formula, obtaining an index below 25%, considered the presence of secondary exocrine insufficiency of the pancreas established.

The daily median pH in patients with chronic pancreatitis of the main and comparative groups, according to the data obtained, is on the border of the interval "hypoacidity is expressed" and is  $(3.61 \pm 0.98)$  pH units.

The study showed that in patients with CP with exocrine insufficiency during periods of spontaneous nocturnal alkalinization and, especially, postprandial alluvium, intragastric pH decreased

### **Conclusions:**

- 1. Characteristic parameters of postprandial gastric alkalinization according to daily pH-monitoring for patients with CP are long-term nature of alkalinization (within  $134.88 \pm 28.23$  minutes), roundness of the shape of the deepening of the pH-gram during alkalinization. The depth of alkalinity depends (P <0,05) on the degree of exocrine insufficiency.
- 2. The indicator of postprandial gastric alkalinization (the ratio of the time of intragastric pH in the first and zero functional pH range to the duration of the entire leaching) can be effectively used both to quantify the postprandial period and to determine the level of exocrine pancreatic insufficiency.
- 3. The phenomenon of spontaneous nocturnal alkalinity in patients with CP was characterized by a longer duration and greater depth in contrast to patients with peptic ulcer of the duodenum. Spontaneous nocturnal alkalinity in patients with CP with hyperacid syndrome has a shorter (P> 0.05) duration and greater (P> 0.05) depth of alkalinity compared with patients with CP with normoacidity and hypoacidity of the stomach.

#### References:

- [1] Mann R, Boregowda U, Vyas N, Gajendran M, Umapathy CP, Sayana H, Echavarria J, Patel S, Saligram S. Current advances in the management of chronic pancreatitis. Dis Mon. 2021 Dec; 67(12):101225. doi: 10.1016/j.disamonth.2021.101225. Epub 2021 Jun 24. PMID: 34176572.
- [2] Singh VK, Yadav D, Garg PK. Diagnosis and Management of Chronic Pancreatitis: A Review. JAMA. 2019 Dec 24;322(24):2422-2434. doi: 10.1001/jama.2019.19411. PMID: 31860051.
- [3] Stepanov, Y., Zavgorodnya, N., & Lukianenko, O. (2018). Clinical and sonographic features of the pancreatic steatosis in children with overweight and obesity. GASTROENTEROLOGY, 51(4), 249–256. https://doi.org/10.22141/2308-2097.51.4.2017.119290
- [4] Stepanov, Y., & Hravyrovska, N. (2015). The First Results of the Application of Shear Wave Transient Elastography When Determining the State of Pancreatic Parenchyma (Review of Literature and Own Researches). GASTROENTEROLOGY, (3.57), 53–58. https://doi.org/10.22141/2308-2097.3.57.2015.81527
- [5] Yadav D, Palermo TM, Phillips AE, Bellin MD, Conwell DL. Painful chronic pancreatitis new approaches for evaluation and management. Curr Opin Gastroenterol. 2021 Sep 1;37(5):504-511. doi: 10.1097/MOG.000000000000769. PMID: 34172622.

- [6] Pivtorak, K. V., Shevchuk, N. A., Pivtorak, N. A., & Fedzhaga, I. V. (2019). Correction of adipocyte secretion disorders in patients with non-alcoholic fatty liver disease with overweight and obesity. Wiadomosci Lekarskie (Warsaw, Poland: 1960), 72(8), 1477-1480. Available from: http://wl.medlist.org/2019\_08\_11/.
- [7] Sung LC, Chang CC, Lin CS, Yeh CC, Cherng YG, Chen TL, Liao CC. Risk of acute atherosclerotic cardiovascular disease in patients with acute and chronic pancreatitis. Sci Rep. 2021 Oct 22;11(1):20907. doi: 10.1038/s41598-021-99915-4. PMID: 34686769; PMCID: PMC8536656.
- [8] Pivtorak, K. V., Mazur, I. A., & Voloshin, M. A. (2017). Correction of metabolic disorders caused by non-alcoholic fatty liver. Deutscher Wissenschaftsherold German Science Herald, 74-77 https://dwherold.de/onewebmedia/2017/4-2017/17-4%5B16023%5D.pdf#page=76
- [9] Cheng, T., Liu, B. F., Han, T. Y., Gu, Z. H., Pan, P., & Yu, H. (2021). Effectiveness and safety of proton pump inhibitors for treating acute pancreatitis: A protocol for systematic review and meta analysis. Medicine, 100(8), e24808. https://doi.org/10.1097/MD.0000000000024808