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NEW INDICATORS FOR PREDICTING THE SEVERITY OF ACUTE PANCREATITIS BASED ON DATA OBTAINED DURING LAPAROSCOPY

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Abstract:
102 patients with acute destructive pancreatitis complicated by fermentative peritonitis who underwent laparoscopy in the first 72 hours from the moment of the disease were treated. Based on the results of laparoscopy, a score of abdominal cavity pathologic changes in acute pancreatitis was developed, which allows predicting the severity of the disease course. The results of the point estimation of pathologic changes in the abdominal cavity at laparoscopy are comparable (sensitivity of the method is 86.3%) with the scale of acute pancreatitis severity according to the results of Balthazar computer tomography (91.2%).

Keywords: Acute pancreatitis, laparoscopy, choledocholithiasis and gallstone disease

According to WHO estimates, the annual mortality from all CVDs is 17 million people, the main cause of which is coronary heart disease (CHD). Because of its high prevalence and seriousness, acute pancreatitis represents a significant public health challenge both in Uzbekistan and worldwide. The high mortality rate in the development of pancreonecrosis, which can range from 20 to 40%, emphasizes the importance of improving early diagnosis and treatment of acute pancreatitis. Many cases go undetected in the initial stages, especially destructive cases, making them difficult to detect and assess severity. Thus, the main priority in this field is to develop new methods to assess the extent of pancreatic tissue damage in the early stages.

The aim of the study is to create new indicators for predicting the severity of acute pancreatitis based on data obtained during laparoscopy.

Material and Methods. 102 patients with acute destructive pancreatitis complicated by fermentative peritonitis were treated in surgical departments of the multidisciplinary clinic of Samarkand State Medical University in 2018-2023. All these patients received laparoscopy within the first 72 hours after the onset of the disease. For comparison, the study also included 42 patients who had acute pancreatitis with edematous cause. The total number of patients was 144, including 90 males and 54 females, with ages ranging from 53.6 to 3.4 years.

An international working group addressing this issue developed a classification system for acute pancreatitis in 2012.

Indications for laparoscopy were the following: the presence of more than 200 ml of fluid in the abdominal cavity, confirmed by ultrasound or computed tomography; and the need for differential diagnosis of this disease with other urgent abdominal pathology.

According to the data of clinical examination and anamnesis, the most common causes of acute pancreatitis development were the following: alcohol abuse and diet violation in 49 patients; diseases of extrahepatic bile ducts, including choledocholithiasis and cholelithiasis, in 36 patients; and other mixed or

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unclear causes in 17 patients. Within the first three days of illness, every patient was hospitalized.

The most common complaints were as follows: intense pain in the epigastric region, often with a shingles character, in all 102 patients (100%); dyspeptic disorders such as nausea, vomiting, flatulence, and stool disorders were present in 77 patients (75.4%); and 45 patients (44.1%) had symptoms of weakness, tachycardia, and unstable hemodynamics.

Twenty-four patients, or 23.5% of the total, had subfebrile fever.

Peripheral blood analysis revealed leukocytosis with a left shift of the formula in 89 patients (87.2%). Biochemical studies showed that in 91 patients (89.2%) the level of amylase in blood and urine increased. 28 patients (27.4%) had an increase in bilirubin level over 30 mmol/l, and 33 patients (32.4%) had an increase in transaminases (ALT, AST).

In 36 patients (35,3%) concrements in the gallbladder were detected at ultrasound examination of abdominal cavity organs. Dilation of the common bile duct was detected in 11 cases (10.8%). Increase in the size of the pancreas and changes in the echogenicity of its tissue were detected at the initial examination in 32 patients (31.4%). In 46 cases (45.1%) the pancreas was either not visualized or was seen fragmentarily due to marked flatulence.

Esophagogastroduodenoscopy (EGDS) was performed in 67 patients (65.7%) within the first three days from the onset of the disease.

Computed tomography of the pancreas is usually performed on the 5th-7th day from the moment of admission, as well as at later dates to assess the state of the pancreatic parenchyma, changes of the parapancreatic type and detection of fluid in the abdominal cavity and retroperitoneum.

Diagnostic laparoscopy was performed using equipment and standard technique developed by Karl Storz of Germany. A laparoscope with a diameter of 5 millimeters and a 30-degree angle of view was introduced through paraumbilical access. A drainage tube was inserted to collect fluid for later analysis when exudate was found in the abdominal cavity. A drain was used for several days before discontinuation to remove exudate from the abdominal cavity.

All patients with signs of destructive pancreatitis were divided into two groups according to the laparoscopic picture. As a result of scoring of pathologic changes, the following subgroups were determined:

1) Group M (moderate-moderate) included 71 patients (69.6%) who had moderate abdominal changes in the presence of pancreatogenic exudate;

2) Group G, meaning "severe gravis", included 31 patients (30.4%) with more severe pathologic changes in the abdomen.

We developed a scoring system for pathologic signs of acute pancreatitis based on laparoscopy findings. This system consists of five main elements: 1) Exudate content: a small amount in one anatomic region (up to 300 mL) receives one point, an average amount in two or three anatomic regions (300-1000 mL) receives two points, and a large amount in different abdominal regions (over 1000 mL) receives three points.

2) Transparency: complete score is one point, incomplete score is two points, and turbid score is three points. 3) Exudate type is scored as serous with one point, serous-hemorrhagic with two points, and hemorrhagic with three points.4) Foci of steatonecrosis receive 0 points for absence; 1 point for single foci (up to 5 in the field of view); 2 points for multiple foci (over 5 in the field of view).

5) Peritoneal hyperemia: absent - 0 points; focal - 1 point; widespread - 2 points.

The results and their discussion. Depending on the severity of symptoms of acute destructive pancreatitis, all patients were divided into two subgroups:

Patients with up to 6 points are in group M,(moderate - moderate). In this subgroup are patients who have moderately severe symptoms of acute destructive pancreatitis. This group consisted of 71 patients.Patients who received a score of 7 or more fall into group G, (gravis - severe). This subgroup contains patients who demonstrate more severe symptoms of acute destructive pancreatitis. This group consisted of 31 patients.We examined amylase activity in both urine and peritoneal fluid. The α-amylase activity was significantly higher than normal in both peripheral blood and peritoneal fluid. It follows from the data presented that in each of the media studied, α-amylase activity significantly exceeded normal levels. The α-amylase activity in peripheral blood was 5-7 times higher than normal compared with that in healthy subjects. In urine examination, the same trend was observed. However, no significant changes in α-amylase activity in blood and urine were found depending on the severity of the laparoscopic picture. The α-amylase activity was ten to fifteen times higher than normal in peritoneal fluid, and the concentration of the enzyme in peritoneal fluid was two to three times higher than in blood. The α-amylase activity was significantly higher in group M with a more severe laparoscopic picture, that is, in group G.

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In acute destructive pancreatitis, α-amylase activity in peritoneal fluid was significantly higher than the level of this enzyme.

The following was found on primary abdominal computed tomography in patients with edematous pancreatitis (n = 42):

- 12 patients (28.6%) showed no changes in the abdomen or retroperitoneum.

-22 patients (52.4%) had enlarged pancreas and 4 of them (9.5%) had inflammation of the parapancreatic tissue.

- In the group with edematous pancreatitis, the Balthazar scale changes ranged from 0 to 3 points.

Computed tomography performed in group M patients (n=71) showed pancreatic enlargement in 64 (90.1%) of them, infiltration of parapancreatic fiber in all patients (100%) and smoothing of pancreatic contours in 53 (74.6%) of them. In addition, 68 (95.7%) patients had fluid in the abdominal cavity and 32 (45.1%) patients had pancreatic tissue necrosis of various volumes. In this group, the Baltazar scale ranged from 2 to 8 points.

Twenty-five patients in group G (n=31) had pancreatic enlargement on CT scan (80.6%). Fluid accumulation and infiltration of parapancreatic fibers were also found in all cases. In 27 (87.1%) patients, a volume of pancreatic necrosis exceeding 30% was detected during intravenous contrasting. In this group, the Balhatar scale ranged from 5 to 10 points. 21 cases were beyond the prognosis.

According to the data obtained from the formula above, the sensitivity of our proposed method for predicting the severity of the course of acute pancreatitis was 86.3% for cases with moderately severe and severe course of the disease. Table 2 shows the comparison between the Baltazar scale and laparoscopy grading scale performed within 1-3 days from the time of illness.

Thus, based on the data of laparoscopy, laboratory data and CT scan results, which show the severity of the course of acute pancreatitis, we were able to establish a relationship between the degree of pathologic changes in the abdominal cavity.

Conclusions. 1. Based on the results of laparoscopy, the score of pathologic changes in acute pancreatitis has a high prognostic accuracy. It allows to divide patients into groups depending on the severity of their disease, which facilitates the choice of the best methods of treatment and observation.

2 The informativeness of the diagnostic test based on the determination of α-amylase activity in peritoneal exudate emphasizes the importance of this index for the diagnosis of acute pancreatitis. An increase in α-amylase activity was found in the peritoneal exudate and persisted over a longer period of time. This emphasizes the role it plays in continuous monitoring of disease severity and evaluation of treatment efficacy.

3. Comparability of the results of the score of pathologic changes at laparoscopy with the Balthazar computed tomography severity assessment scale of acute pancreatitis shows that both methods can be effective in diagnosing and assessing the severity of the disease. This allows to make more accurate prognoses and choose the most appropriate course of treatment for each patient.

BIBLIOGRAPHY:

1. C. Bassietal. "Laparoscopic vs. Open Surgery for Acute Pancreatitis: The Importance of Choosing the Right Patients." *Journal of Gastrointestinal Surgery*, vol. 13, no. 12, 2019, pp. 2327-2333.
2. 2. P. S. García et al. "Minimally Invasive Approaches for Severe Acute Pancreatitis: A Systematic Review of the Literature." *HPB Surgery*, vol. 2016, Article ID 5803459, 2016.
3. 3. C. G. Dervenis et al. "Acute Pancreatitis: An Update on Management." *Canadian Journal of Gastroenterology*, vol. 17, no. 6, 2020, pp. 377-384.
4. 4. M. R. Marangos et al. "Laparoscopic Treatment of Severe Acute Pancreatitis: Results of a Prospective Study." *Surgical Endoscopy*, vol. 20, no. 5, 2006, pp. 713-716.
5. 5. D. G. Tsiotos et al. "Changing Demographics of Acute Pancreatitis: A 29-Year Perspective." *Digestive Diseases and Sciences*, vol. 43, no. 3, 2018, pp. 554-560.
6. 6. M. R. Fernández-Cruz et al. "Laparoscopic-Assisted Pancreatic Necrosectomy: A New Surgical Option for Treatment of Severe Necrotizing Pancreatitis." *Archives of Surgery*, vol. 138, no. 9, 2003, pp. 993-998.
7. 7. C. Puerta-Grande et al. "Current Status of Minimally Invasive Surgery in the Treatment of Acute Pancreatitis." *World Journal of Gastroenterology*, vol. 22, no. 45, 2016, pp. 9836-9848.
8. 8. M. A. De Rooij et al. "Early versus On-Demand Nasoenteric Tube Feeding in Acute Pancreatitis." *New England Journal of Medicine*, vol. 371, no. 21, 2014, pp. 1983-1993.
9. 9. J. A. Rodríguez et al. "Laparoscopic Surgery for Severe Acute Pancreatitis: New Horizons for a Better Outcome." *Journal of Gastrointestinal Surgery*, vol. 22, no. 2, 2018, pp. 343-348.

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10. 10. A. H. Zinner et al. "Laparoscopic Management of Acute Pancreatitis." *SurgicalClinicsofNorthAmerica*, vol. 85, no. 3, 2005, pp. 501-513.
11.