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OBSTRUCTIVE JAUNDICE OF BENIGN GENESIS: A PRESENT-DAY CONCEPT OF TREATMENT (literature review)

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The article presents a review of the literature of domestic and foreign authors on the treatment of patients with obstructive jaundice syndrome in benign diseases of the hepatobiliary zone.

The aim. To study modern approaches to the treatment of obstructive Jaundice of benign genesis in the context of the development of science.

Material and methods. A literature search was carried out on research in the following databases: Scientific Electronic Library, Scopus, Medline/PubMed. Forty-one publications containing data on the treatment of obstructive jaundice of benign genesis were selected for analysis. Search depth accounts for 15 years. Inclusion criteria: sources from 2003-2018, development of treatment methods, evaluation of the effectiveness of treatment of patients with obstructive jaundice of benign genesis, the diagnosis of Obstructive Jaundice is consistent with international criteria and Clinical Protocols of the Republic of Kazakhstan. Exclusion criteria were: duplicate publications, articles on obstructive Jaundice of benign genesis, but do not reveal the treatment in this disease and, therefore, are not appropriate in subject, as well as experimental work on animals.

Results and discussion. The analysis of various types of operations on the biliary tract and liver in the syndrome of obstructive jaundice of various etiologies. The complexity of treating patients with obstructive jaundice is due to the severity of their initial condition. Developing cholestasis, biliary hypertension, and acholia cause gross functional and morphological changes in the liver, which lead to a relatively rapid development of liver failure, which causes a high mortality rate. The search for ways to reduce the number of lethality and complications of many researchers has led to the fact that today the two-stage treatment tactics with the use of minimally invasive treatment methods has become more widely used, allowing to achieve the maximum result with minimal operating trauma. The use of endoscopic papillosphincterotomy as a method of choice for obstructive jaundice with choledocholithiasis, regardless of age and the presence of comorbidities, and as the main treatment method, is accompanied by the development of a number of terrible complications, such as bleeding, acute pancreatitis, acute cholangitis, retroduodenal perforation and others, occurring in 5.4-18.3% of patients according to many authors. Perhaps this explained the lack of consensus regarding minimally invasive methods of treatment.

Conclusions. Today, the issue of the optimal complex of therapeutic measures in patients with obstructive jaundice remains incompletely resolved, which explains the need to continue to look for new ways to solve this problem.

Keywords: obstructive jaundice, cholelithiasis, choledocholithiasis, minimally invasive treatment methods.

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Т Ұ Ж Ы Р Ы М

ҚАТЕРСІЗ ГЕНЕЗДІҢ МЕХАНИКАЛЫҚ САРҒАЮЫ: ҚАЗІРГІ ЗАМАНҒЫ ЕМДЕУ ТҰЖЫРЫМДАМАСЫ (әдебиетке шолу)

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Мақалада гепатобилиарлы аймақтың қатерсіз аурулары кезінде механикалық сарғаю синдромы бар науқастарды емдеу әдістерінің отандық және шетелдік авторларының әдебиетіне шолу жасалған.

Мақсаты. Ғылымның дамуы жағдайында қатерсіз генезді механикалық сарғаюды емдеудің заманауи тәсілдерін зерттеу.

Материал және әдістері. Ғылыми электрондық кітапхана, Scopus, Medline/PubMed мәліметтер базасында әдебиеттер бойынша ізденістер жүргізілді. Сараптама үшін механикалық сарғаю

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емі туралы мәліметтер бар қырық бір басылым таңдалды. Ізденіс көлемі 15 жылды құрады. Қос өлшемдері: 2003-2018 жж толық мәтінді басылымдар, емдеу әдістерін әзірлеу, механикалық сарғаюы бар науқастарды емдеу тиімділігін бағалау, «Механикалық сарғаю» диагнозының ҚР клиникалық хаттамаларына және халықаралық өлшемдерге сәйкес болуы. Қоспа өлшемдері: қайталанған басылымдар, механикалық сарғаю емінің сұрақтарын толық қамтымайтын, тақырыпқа сәйкес емес мақалалар мен жануарларға жасалған тәжірибелік жұмыс нәтижелері.

Нәтижелері және талқылауы. Өр түрлі этиологиядағы механикалық сарғаю синдромы кезінде өт шығару жолдары мен бауырда операциялардың әрқелкі түрлеріне талдау жүргізілді. Механикалық сарғаюмен ауыратын науқастарды емдеу күрделілігі олардың бастапқы жай-күйінің ауырлығына байланысты. Дамып келе жатқан холестаз, өт гипертензиясы, ахолия бауырдың өрескел функционалды және морфологиялық өзгерістерін тудырады, олар бауыр жетіспеушілігінің салыстырмалы тез дамуына әкеледі, бұл өлім-жітімнің жоғары пайызын тудырады. Көптеген зерттеушілердің өлім-жітім мен асқынулардың бірқатар дамуымен қатар жүреді бүгінгі күні кішкентай жарақат кезінде барынша нәтижеге қол жеткізуге мүмкіндік беретін аз инвазивті емдеу тәсілдерін қолдана отырып, емдеудің екі кезеңді тактикасы кеңінен қолданылуына алып келді. Холедохолитиаз аясында механикалық сарғаю кезінде таңдау әдісі ретінде эндоскопиялық папиллосфинктеротомияны пайдалану жасына және ілеспелі аурулардың болуына қарамастан және емдеудің негізгі әдісі ретінде көптеген авторлардың деректері бойынша пациенттердің 5,4-18,3%-да туындайтын ауыр асқынулардың бірқатар дамуымен қатар жүреді. Емдеудің аз инвазивті әдістеріне қатысты бірыңғай пікірдің болмауын осы жәйт түсіндіретін сыңайлы.

Қорытынды. Бүгінгі күні механикалық сарғаюмен ауыратын науқастарда емдік іс-шаралардың оңтайлы кешені туралы мәселе толық шешілмеген, бұл осы проблеманы шешудің барлық жаңа жолдарын іздестіруді жалғастыру қажеттілігін түсіндіреді.

Негізгі сөздер: механикалық сарғаю, өт тас ауруы, холедохолитиаз, аз инвазивті емдеу әдістері.

РЕЗЮМЕ

МЕХАНИЧЕСКАЯ ЖЕЛТУХА ДОБРОКАЧЕСТВЕННОГО ГЕНЕЗА: СОВРЕМЕННАЯ КОНЦЕПЦИЯ ЛЕЧЕНИЯ (обзор литературы)

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В статье представлен обзор литературы отечественных и зарубежных авторов методов лечения больных с синдромом механической желтухи при доброкачественных заболеваниях гепатобилиарной зоны.

Цель исследования. Изучение современных методов лечения механической желтухи доброкачественного генеза в контексте развития науки.

Материал и методы. Поиск литературы проведен по исследованиям в следующих базах данных: Научная электронная библиотека, Scopus, Medline/PubMed. Для анализа была отобрана сорок одна публикация, содержащая данные по лечению механической желтухи доброкачественного генеза. Глубина поиска составляла 15 лет. Критерии включения: источники с 2003 по 2018 гг., разработка методов лечения, оценка эффективности лечения больных механической желтухой доброкачественного генеза, соответствие постановки диагноза «Механическая желтуха» международным критериям и Клиническим Протоколам Республики Казахстан. Критериями исключения являлись: дублирующиеся публикации, статьи по механической желтухе доброкачественного генеза, но не раскрывающие лечение при этом заболевании, и, следовательно, не подходящие по тематике, а также экспериментальные работы на животных.

Результаты и обсуждение. Проведен анализ различных видов операций на желчевыводящих путях и печени при синдроме механической желтухи различной этиологии. Сложность лечения больных механической желтухой обусловлена тяжестью их исходного состояния. Развивающиеся холестаз, желчная гипертензия, ахолия вызывают грубые функциональные и морфологические изменения печени, которые приводят к сравнительно быстрому развитию печеночной недостаточности, что обуславливает высокий процент смертности. Поиск путей снижения числа летальности и осложнений многих исследователей привел к тому, что на сегодняшний день стала более широко применяться двухэтапная тактика лечения с применением малоинвазивных способов лечения, позволяющая добиться максимального результата при минимальной операционной травме. Использование эндоскопической папиллосфинктеротомии, как метода выбора при механической желтухе на фоне холедохолитиаза, вне зависимости от возраста и наличия сопутствующих заболеваний, и в качестве основного метода лечения, сопровождается развитием ряда грозных осложнений, таких как кровотечение, острый панкреатит, острый холангит, ретродуоденальная перфорация и других, возникающих у 5,4-18,3% пациентов по данным многих авторов. Возможно, это и объяснило отсутствие единого мнения в отношении малоинвазивных методик лечения.

Выводы. На сегодня остается неполностью решенным вопрос об оптимальном комплексе

лечебных мероприятий у больных с механической желтухой, что объясняет необходимость продолжать искать все новые пути решения данной проблемы.

Ключевые слова: механическая желтуха, желчнокаменная болезнь, холедохолитиаз, малоинвазивные методы лечения.

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Among surgical diseases of hepatobiliary zone, the most severe are those that are accompanied by persistent obstruction of main bile ducts with subsequent development of obstructive jaundice. The most frequent causes of obstructive jaundice are cholelithiasis (15-40%) and tumor lesions of hepatopancreatobiliary zone, making up 65-68% of all jaundices [1, 2]. Gallstone disease (GD) today is fairly common disease. Increase in incidence of cholelithiasis, noted in recent decades, is accompanied by increase in frequency of its complicated forms. Among the complications, stenosis of major duodenal papilla (MDP) is most common - 47.6% and choledocholithiasis - 8.1-26.8% of patients [3]. Choledocholithiasis is the most common cause of obstructive jaundice: from 48.8% to 91% of cases, and MDP stones ampoule cause jaundice twice as often as those of main bile ducts [4]. Stenosis of MDP leads to obstructive jaundice in 50-60% according to Malyarchuk V.I. and Pautkina Y.F. (2004) [5]. Despite the progressive development of surgery, in operations performed at jaundice height, mortality remains high and currently ranges from 4.6% to 19.1%. The incidence of postoperative mortality with jaundice up to 10 days is 13.3%, with duration over two weeks it reaches 21.1-32.3% [5, 6, 7].

The aim of the study is to study modern approaches to the treatment of obstructive jaundice of benign genesis in the context of the development of science.

MATERIAL AND METHODS

A literature search was carried out on research in the following databases: Scientific Electronic Library, Scopus, Medline / PubMed. Forty-one publications containing data on the treatment of obstructive jaundice of benign genesis were selected for analysis. Search depth accounts for 15 years.

We included articles that met our inclusion criteria: sources from 2003-2018, development of treatment methods, evaluation of the effectiveness of treatment of patients with obstructive jaundice of benign genesis, the diagnosis of Obstructive Jaundice is consistent with international criteria and Clinical Protocols of the Republic of Kazakhstan.

Exclusion criteria were: duplicate publications, articles on obstructive Jaundice of benign genesis, but do not reveal the treatment in this disease and, therefore, are not appropriate in subject, as well as experimental work on animals.

The study data were analysed using a unified and multivariate analysis suitable for time-to-event data.

RESULTS AND DISCUSSIONS

The results of the studies analyzed confirm that the complexity of the treatment of patients with obstructive jaundice is due to the severity of their initial condition. In the shortest possible time it is necessary to prevent severe complications of

obstructive jaundice - cholangitis, which occurs in most cases against the background of cholestasis with secondary infection, cholangiogenic abscesses of the liver, liver failure, biliary cirrhosis. Their frequency remains high, has no tendency to decrease and amounts to 35-54% according to various authors. Helping such patients in order to prevent the above complications lies in the early decompression of the biliary tract [8, 9, 10, 11, 12].

The choice of decompression method, further treatment tactics, and the prognosis of the disease are largely determined by the correct and quickly established diagnosis. But due to the diversity of etiology, the absence of pathognomonic symptoms and laboratory signs characteristic of one or another cause of jaundice, as well as the complexity of the anatomical and physiological ratios of the hepatopancreatoduodenal organs, the early determination of the level and cause of the bile-excretion unit remains a complex problem of urgent surgery. Along with clinical and laboratory data, it is necessary to have specific, reliable instrumental data on the presence of biliary hypertension, the nature and level of the bile-excretion unit [13, 14].

There are no generally accepted standards that determine the effectiveness, advantages and disadvantages of various methods for decompression of the biliary tract. Therefore, the problem of choosing the method of instrumental preoperative decompression of the bile ducts in the breast and its complications remains a subject of discussion [9].

Indications for the use of one or another method of biliary tract decompression is determined individually, depending on the clinical situation, the nature, level and extent of the bile excretion block.

The advantage of minimally invasive surgical technologies is the combination of high diagnostic and therapeutic efficacy with low trauma, as well as the rapid obtaining of the "clinical benefit" effect (reduction of functional impairments, improved health, reduced pain intensity and weight gain). The indications for one or another modern minimally invasive method of decompression of the biliary tract should be set individually depending on the clinical situation, the nature, level and extent of barriers to the outflow of bile, the capabilities of the hospital, and the qualifications of specialists.

Treating patients with obstructive jaundice is due to the severity of their initial condition. Developing cholestasis, biliary hypertension, and acholia cause gross functional and morphological changes in liver, which lead to relatively liver failure rapid development [15]. Reparative processes in liver after cholestasis elimination are in direct proportion to its duration. After cholestasis elimination with duration of 10 days, normalization of the liver parenchyma structure occurs in first 15 days, with prolonged cholestasis (20 days), structural and functional restructuring of organ is partially reversible, and

after 25 daily cholestasis, liver structure restoration practically does not occur due to the appearance of central veins [16].

Also one of the important factors determining surgery outcome, is age of patients. Postoperative mortality in elderly and old patients operated on at jaundice height is 3–10 times higher than that in younger patients [17].

Search for ways to reduce the number of lethality and complications of many researchers has led to the fact that today two-stage treatment tactics with the use of minimally invasive treatment methods has become more widely used, allowing to achieve maximum result with minimal operating trauma. This allows you to quickly remove patients from critical condition with a small operational risk, especially for elderly and old people [18]. Minimally invasive accesses, depending on access to the ductal system, are presented in form of: 1. Retrograde transpapillary access (ERCP in combination with papillosphincterotomy, drainage, endoscopic balloon papilloidation). 2. Antegrade ductal, performed under ultrasound control, CT, X-ray television, video paroscopy (percutaneous, transhepatic microcholecystostomy, cholangiostomy) [19].

It is believed that with mechanical jaundice on the background of ICD, endoscopic papillosphincterotomy (EPST) is method of choice [20]. Endoscopic methods firmly occupied leading positions, pushing aside classic surgical interventions. Endoscopic technologies usage has significantly reduced the mortality rate for cholangitis and breast cancer. However, in a number of clinical situations, failures in transpapillary and intraductal endoscopic operations reach 20-30%, while complications and mortality – 10-15% [5]. Reason for unsuccessful interventions, except for non-standard situations (12 pct diverticulum, multiple stored and large stones, hepaticocholedochus strictures, biliary fistulas), are technical errors and imperfection of methods themselves. The principle of retrograde endoscopic treatment is based on the effect on sphincter of Oddi so that stones can independently retreat into the duodenum or can be removed by catheter with inflated balloon at the end or basket of Dormia [21]. Successful endoscopic papillosphincterotomy with stone removal is possible in 75-95% of patients, it is not possible to perform EPST in 1-13% of cases. Most authors consider EPST justified in case of stone infringement in MDP, cicatricial papilla narrowing, combination of bile ducts lesions in the form of lithiasis and MDP stenosis. However, some specialists consider indications for endoscopic papillosphincterotomy with choledocholithiasis to be relative, especially in young people, in patients with mild jaundice, with not high or moderate risk of surgery. This approach is explained by desire to preserve the sphincter apparatus of the major duodenal papilla, to avoid possible complications after endoscopic pilosphincterotomy [22]. At the same time, it is believed that endoscopic papillosphincterotomy should be used as the method of choice for obstructive jaundice against the background of choledocholithiasis, regardless of age and concomitant diseases presence, as the main treatment method, as well as the first stage of operation aimed at eliminating causes of jaundice [23]. Lack of consensus is probably explained by possible development of terrible complications number, such as bleeding, acute pancreatitis, acute cholangitis, retroduodenal perforation, and others, occurring in 5.4-18.3% of patients. Mortality after EPST according to literary data is 0.6–1.6% [24]. According to some

authors, complications in most cases depend on technique of performing endoscopic papillosphincterotomy than on clinical manifestations of disease and general status of the patient, although both factors influence the outcome [25]. For prevention of a complications number after EPST, nasobiliary drainage of common bile duct or hepaticocholedochus endoprosthesis began to be performed today. Studies of experience of using endoscopic papillosphincterotomy at the height of jaundice compared with traditional surgical interventions have shown reduction in complications from 22% to 2%, decrease in mortality by 4.4 times [26]. However, there are studies that show that preoperative endoscopic papillosphincterotomy increases total number of complications that could have been avoided with traditional approach (J.P. Neoptolemos, 1989). Attempts to reduce the incidence of complications after EPST, as well as preserve anatomical integrity of papilla, led to the development and introduction into clinical practice of method of endoscopic balloon dilatation of papilla [27, 28].

The use of endoscopic transpapillary interventions is not always possible and in some cases is rather difficult. Billroth II stomach resection, as well as in presence of parapapillary diverticulum. In such cases, percutaneous, transhepatic endobiliary decompression methods are used under ultrasound, CT, and rengen-television monitoring. Low trauma of these interventions on biliary ducts, they are highly effective as way of people preoperative preparation of patients, but also as an independent minimally invasive surgical method of treatment, contributed to its rapid spread [29, 30].

Takao Itoi et al. (2010), Wiriaporn Ridditid, Rungsun Rerknimitr (2012) for acute cholangitis, accompanied by obstructive jaundice, suggest the use of transnasal endoscopic biliary drainage [31, 32].

In conditions of purulent cholangitis, preference should be given to external drainage of the ducts until their complete rehabilitation and antibacterial therapy, taking into account the association of aerobic and anaerobic microbial flora in 70% of cases. In percutaneous transient nocturnal cholangiostomy, the following complications are encountered: catheter migration, bile bleeding into the abdominal cavity and biliary peritonitis, hepatic and renal failure, etc. Complications develop in 4.5–5% of patients, mortality is 2.6–16.6%. Moreover, mortality directly related to this method is relatively low (less than 5%), and mortality due to common causes, including the progression of hepatic renal failure, can reach 21.3% [33].

External cholecystostomy is most acceptable in the complex therapy of acute pancreatitis complicated by obstructive jaundice. A paw is performed: endoscopic cholecystostomy and percutaneous hepatic cholecystostomy under ultrasound control or cholecystostomy from mini access. Many researchers prefer microcholecystostomy under ultrasound control, explaining their choice by relative ease of implementation, safety, high efficiency, and small number (0.5-2.3%) of complications [34]. In connection with development of new surgical technologies, the improvement of surgical instruments, as well as accumulation of experience with laparoscopic operations, publications have appeared about the possibility of treating JCB, complicated by impaired terminal section, in a one-step manner. It consists in performing a laparoscopic or cholecystectomy mini-approach combined with intervention on the common bile duct

[6]. In literature, the percentage of complications in two-stage approach (EPST with subsequent laparoscopic cholecystectomy) is lower than in "open" interventions, but higher than in laparoscopic choledocholithotomy. Despite this, in recent years in domestic and foreign literature it has not been possible to find publications specifically devoted to the application of these methods in emergency surgery for choledocholithiasis treatment complicated by obstructive jaundice.

According to A.I. Ikramova et al. (2014), new perspectives in the development of surgery, including biliary surgery, are mainly associated with the widespread introduction into clinical practice of new high-tech diagnostic methods and minimally invasive surgical interventions that reduce the risk of surgery and expand the possibilities of surgical treating patients. New opportunities for non-invasive diagnosis of lesions of the bile ducts opens magnetic resonance cholangiopancreatography, which allows obtaining images of the bile ducts similar to those of endoscopic retrograde cholangiography [35].

Thus, analyzing literature data in presence of variety of methods for the treatment of obstructive jaundice, each of them has its own advantages and disadvantages. Currently, there is no clear algorithm for application of a particular technique. With seeming diversity of choice, there is a tendency of most surgeons to use in practice methods that have been worked out by them or confirmed their effectiveness. To date, question of duration of biliary tract decompression and radical operation optimal timing remains controversial. According to various authors, these periods vary from 1-2 weeks after decompression to 4-6 weeks after normalization of bilirubin levels [36].

Modern ideas about the pathophysiology of cholestasis are based primarily on experimental, biochemical, and instrumental research data supplemented by clinical observations and, despite the progress of medical science, are still hypothetical. In case of mechanical jaundice, an obstacle to the flow of bile from hepatic acini occurs. Increasing the pressure above 2.7 kPa (270 mm wg. Art.) in the bile capillaries leads to rupture of contacts between hepatocytes and bile penetrates into the Disse spaces, and then into the lymph and blood. With a pressure over 300 mm of water, Art. bile can fall into sinusoids. The transhepatic reverse bile flow is also considered possible due to a change in the electrical charge on the hepatocyte membranes. In addition, part of the bile under increased pressure at the port triad level seeps into the connective tissue of the triads, and then into the lymphatic capillaries located here, then entering the blood. An increase in the content of bile acids in the blood can cause erythrocyte hemolysis, leukocytolysis, decreased blood clotting, an increase in membrane permeability and the development of an inflammatory process at the site of contact with tissues: hepatic necrosis, peritonitis, acute pancreatitis [37]. When the pressure in the bile capillaries increases, the microcirculation and blood supply to the liver cells are disturbed, the membranes of the bile ducts and hepatocytes are damaged. The secretion of bilirubin and bile acids can be completely stopped, while bile becomes colorless (white bile) and resembles mucous fluid.

The pathogenesis of liver cell damage in mechanical jaundice syndrome is damage to the hepatocyte membranes by reducing the phosphatidylcholine content in them; in metabolic disorders of oxidative processes (accumulation of free fatty

acids and triglycerides in hepatocytes), leading to oxidative stress; Kupffer cell secretion of proinflammatory cytokines; transformation of endothelial cells into fibroblasts; development of insulin resistance leading to impaired lipogenesis, glucose metabolism.

It has been established that, with a short (several days) blockade of bile outflow, a relative adaptation of hepatocytes to cholestasis develops, which is accompanied by a decrease in bile secretion and a decrease in the activity of some liver enzymes. During prolonged obturation of the biliary tract, these adaptive mechanisms break down [38].

The progression of liver failure in obstructive jaundice, many experts associate with rapid decompression of tract biliary and active diversion of bile out into the intestinal tract. It was revealed that in acute blockade of bile outflow, the relative adaptation of hepatocytes to cholestasis develops, which is accompanied by decrease in bile secretion and decrease in activity of some liver enzymes. With long-lasting obturation of bile ducts, these adaptive mechanisms for cholestasis are disrupted, which leads to a deepening of dystrophic changes in hepatocytes and development of focal necrosis in liver. Surgery accompanied by simultaneous and rapid elimination of biliary hypertension and activation of the cytolytic process in liver also leads to breakdown of the adaptation of hepatocytes to cholestasis with acute liver failure development. At rapid rate of decompression of biliary tract, "withdrawal syndrome" develops for hepatocytes, which causes rapid change in intrahepatic blood flow and development of functional and morphological changes, and this, along with other factors, contributes to acute liver failure development.

Studies show that patients with mechanical jaundice often have hemorrhagic complications, thrombosis and emboli. The main role in the development of these complications belongs to violations of the humoral regulatory systems of the body - coagulation, fibrinolytic, kallikrein-kinin [39]. It is these disorders of micro-rheology and coagulant properties of blood, microthrombotic and micro-fibronemboli, changes in capillary permeability that underlie the circulatory disorders of vital organs and are the leading cause of their functional insufficiency, which most often manifests as hepato-renal syndrome.

Kidney damage in obstructive jaundice is not associated with the release of substances affecting the kidney, as was suggested earlier, but with infection and septicemia caused by cholangitis accompanying obstructive jaundice, a decrease in the efficiency of renal perfusion and a subsequent decrease in glomerular filtration. It has been experimentally proven that mechanical jaundice does not in itself cause glomerular filtration disorders [40].

These factors make us look for new approaches in the treatment of these patients. The results of treatment can be improved through the use of more benign interventions, the main purpose of which is diagnosis, separation of treatment of obstructive jaundice into two stages, with the biliary tract decompression being carried out at the first stage as preparation for the main stage of treatment. cases and complete replacement of surgical treatment. However, a number of methods for biliary tract decompression (laparoscopic cholecystostomy, endoscopic papillosphincterotomy, nasobiliary drainage) for obstructive jaundice are often not feasible for various reasons. An important

role in the outcome of mechanical jaundice is played by the development of the syndrome of endogenous intoxication, which is the main factor shaping the clinical picture of the disease and determining the nature and outcome of the disease. The large role of endogenous intoxication in the pathogenesis of obstructive jaundice of non-tumor etiology determines the importance of timely and intensive complex therapy, which can prevent the development of irreversible disturbances in the structure and function of many organs and systems and facilitates the processes of repair and adaptation [39].

The vast majority of surgeons recommend starting treatment with conservative events in almost all patients. The exception is made by patients with a clinical picture of peritonitis at whom operative treatment is carried out in the emergency order.

Conservative preoperative therapy should be aimed at improving the properties and structure of cell membranes, eliminating the resulting cytopenia, correcting the hemostatic system, protein and electrolyte imbalance, rheological disorders, arresting activation of the pathological process in the liver, reducing intoxication, hypoxia, restoration of energy potential, elimination of liver failure and inflammatory infectious phenomena in the bile ducts [41].

Comprehensive treatment of breast cancer in some cases may be ineffective in preventing liver failure, according to literary data - in 54% of patients. Conducting traditional infusion therapy, consisting of solutions of dextrose (glucose) and crystalloids, as well as forced diuresis, can "reduce the level of

toxic metabolites" for a certain time and improve the state of homeostasis.

CONCLUSIONS

Thus, the question of optimal complex of therapeutic measures in patients with obstructive jaundice remains incompletely resolved. First of all, this refers to the development of more efficient surgical tactics for treating patients, especially elderly and senile patients with long-term mechanical cholestasis, determining the timing of endoscopic interventions, as well as volume and nature of intensive therapy after decompression of biliary tract as an integral part of complex treatment of patients with obstructive jaundice.

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Authors' contributions

Aitbayeva Aliya Matzhanovna contributed substantially to the conception and design of the study, the acquisition of data, the analysis and interpretation; responsible for all aspects of the work related to the accuracy of any part of the work.

Zhakiev Bazylbek Sagidollievich participated in the preparation, correction and approval of the final version of the article.

Conflict of interest

The authors declare no conflict of interest.

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