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## COMPLEX TREATMENT OF PATIENTS WITH PURULENT CHOLANGITIS BENIGN GENESIS BY USING PLASMAPHERESIS

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## ПЛАЗМАФЕРЕЗНИ ҚўЛЛАГАН ҲОЛДА ЯХШИ СИФАТЛИ ЙИРИНГЛИ ХОЛАНГИТ БИЛАН ОҒРИГАН БЕМОРЛАРНИ КОМПЛЕКС ДАВОЛАШ

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## КОМПЛЕКСНОЕ ЛЕЧЕНИЕ БОЛЬНЫХ ГНОЙНЫМ ХОЛАНГИТОМ ДОБРОКАЧЕСТВЕННОГО ГЕНЕЗА С ИСПОЛЬЗОВАНИЕМ ПЛАЗМАФЕРЕЗА

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**Резюме.** Йирингли холангит ва унинг фонида юзага келадиган билиар сепсис қонда кўплаб сувда эрийдиган ва албуминда эрийдиган токсинларнинг тўпланиши билан бирга келади. Билиар сепсис ва септик холангитда плазмаферезни қўллаш бўйича адабиётларнинг таҳлили усулнинг юқори самарадорлигини ва уни клиник амалиётда қўллашнинг кенг имкониятларини кўрсатади. Беморларнинг аҳволи яхшиланди, интоксикация белгиларининг пасайиши объектив равишда қондаги билирубин даражасининг пасайиши, ўрта молекулаларнинг концентратсияси, трансаминазалар ва гидроксиди фосфатаза фаоллигининг пасайиши билан тасдиқланди.

**Калит сўзлар:** йирингли холангит, билиар сепсис, плазмаферез.

**Abstract.** The purulent cholangitis and appearing on its background biliary sepsis is accompanied by accumulation in the blood of a plurality of water-soluble and albumin-soluble toxins. Analysis of publications on the use of plasmapheresis in biliary sepsis and septic cholangitis, demonstrates the high efficiency of the method and the broad possibilities of its use in clinical practice. Marked improvement in the patients, reducing signs of intoxication, confirmed objectively decrease blood levels of bilirubin, the concentration of middle molecules, reducing the activity of transaminases and alkaline phosphatase.

**Keywords:** suppurative cholangitis, biliary sepsis, plasmapheresis.

**Introduction.** The defeat of the extrahepatic bile ducts, causing block the outflow of bile into the intestine, bile hypertension and cholemic to endogenous intoxication, which is based on a deep violation of detoxification and liver synthetic function [3, 10]. Reduced hepatic clearance of substances produced in the gut together with the violation detoxication functions of the liver is accompanied by accumulation of a plurality of water-soluble (ammonia, phenols, mercaptans) and albumin-soluble toxins (aromatic amino acids, free fatty acids, endogenous benzodiazepines and false neurotransmitters etc.). [6, 14]. It is believed that all of these substances accumulate in the plasma, violate the basic metabolic functions of the body. Since the action associated with the development of hepatic encephalopathy, cerebral edema, coma, renal failure, pulmonary edema, collapse [5, 10].

**Modern detoxification technology.** In recent years, for the active excretion of toxic substances from the bloodstream and tissue depots increasingly widespread methods of extracorporeal detoxification of the body [4, 7, 9]. Proposed intraportal administration of drugs, exchange transfusion, plasmapheresis, hemodialysis and peritoneal dialysis, lymphatic methods [4, 7]. The effectiveness of each of these is discussed so far, as is often the complication of their use in superior associated benefits. In particular, are not widely used in practice arterialization portal blood, cross-circulation, exchange transfusion, and some others, due to both the technical complexities of the procedures and the risk of developing severe complications [5, 11, 12]. The bulk of the toxic substances that accumulate in the blood when hepatic dysfunction associated with plasma proteins, in particular albumin, but a number of compounds (e.g., ammonia, creatinine) are not associated with proteins and water-soluble. On this basis, the method of purifying the blood in hepatic failure must meet the following requirements:

- to ensure removal of protein-bound and water-soluble toxins;
- maintain normal rates of acid-base and electrolyte balance;
- to maintain the effectiveness of the procedure when the duration of its conduct;
- cause minimal side effects and complications [6, 14].

These requirements fully comply with plasmapheresis method that allows for partial or total removal of the plasma of the patient with all the contained pathological ingredients and replacing it with an adequate amount of fresh donor plasma solution of amino acids, protein, albumin [1].

**Plasmapheresis: types and indications.** Depending on the principle of the plasmapheresis can be classified into centrifugal (gravity), when the blood is centrifugally separated into components in accordance with their specific gravity, membrane, when carried out on a plasma separation membrane having a pore diameter of 0.2-0.8 mm, and filtration-centrifuge in which the centrifugal force is used to improve the filtration efficiency of the plasma. On the basis of plasmapheresis produces a lot more complex operations - plasmadsorption, immunoadsorption, cascade plasmapheresis, kriaferез et al. [5, 7, 10]. Plasmapheresis as a universal efferent method allows you to delete all substrates found in plasma, regardless of their nature (grease, water-soluble), molecular weight (low, medium, and high molecular weight compounds large molecular), the presence and magnitude of electrostatic charge of molecules [3, 11]. Ability to plasmapheresis effective removal from the body of toxic metabolites broad spectrum is used in the treatment of acute hepatic dysfunction, as a comprehensive treatment of jaundice of various origins. Typically, the

method used for symptoms of hepatic failure, such as jaundice, neurological disorders, changes in biochemical indices (hyperbilirubinemia, increased activity of transaminases, hypoproteinemia, increased creatinine and urea et al.), in the development of septic complications [16]. One of the first in Russia plasmapheresis procedures in patients with obstructive jaundice and liver failure have been carried out in 1977 Y.M. Lopukhin with a message about the positive result, which lies in the effective removal of bilirubin from the blood of the patient, with the improvement of the general condition of the patients [9]. Y.M. Dederer recommends as preoperative preparation of patients with obstructive jaundice spend 3-4 plasmapheresis procedure that can effectively remove the body of toxic substances and carry out further surgery in more favorable conditions. A.I. Agureev and colleagues. (1989) was used plasmapheresis in 42 patients with obstructive jaundice. There was a reduction of bilirubin blood by 15-30%, while the effectiveness of plasmapheresis decreased with bilirubin concentrations below 100 mmol/l and gradually increased with the increase of bilirubinemia. After the procedure, patients feel better, laboratory data showed a decrease in the concentration of middle molecules from 0.31 to 0.24 conventional units [2]. E.G. Abdullayev and colleagues. [1], using plasma exchange in patients with obstructive jaundice, noted a decrease in the concentration of middle molecules by 40% of bilirubin - a 60% decrease in the activity of transaminases and alkaline phosphatase by 35-40%. The authors recommend plasmapheresis in the preoperative and postoperative periods as an effective way to combat with cholemic intoxication, acute liver failure and residual endotoxemia, which significantly reduces the risk of acute liver failure and allows you to expand the scope of surgical procedures [1, 7]. I.M. Povzhitkov and colleagues. (1989) present data on the reduction of bilirubin in blood plasma plasmapheresis an average of 49.2%. A.I. Lobakov and colleagues. (1989) note the decrease in the concentration of direct bilirubin under the influence of plasmapheresis to  $21.4 \pm 2.1\%$ . Kimata H and colleagues. applying plasmapheresis in experimenting in dogs with obstructive jaundice noted that plasmapheresis may shorten the jaundice and can improve liver function after treatment of obstructive lesions in the biliary tract [18]. When liver failure after plasmapheresis, many authors have noted improvement in general condition, reducing the symptoms of intoxication, disappearance of the effects of toxic encephalopathy and pruritus [2, 7, 12]. Because through plasmapheresis is possible to remove microbes, toxins, degradation products, immune complexes, pathogens, K.V. Lapkin and colleagues. consider it appropriate to use the method in the treatment of patients with obstructive jaundice, which is accompanied by an acute inflammation in the gallbladder or bile ducts when intoxication is caused not only bilirubinemia, and purulent infection [8].

**Conclusion.** The analysis of publications devoted to the use of plasmapheresis in hepatic failure and mechanical jaundice, indicates a high efficiency of the method and the broad possibilities of its use in clinical practice. The authors note an improvement of patients, reducing the signs of cholemic intoxication, reduction phenomena hepatocerebral insufficiency, objectively verifiable reduction in blood levels of bilirubin, the concentration of middle molecules, reducing the activity of transaminases and alkaline phosphatase. The use of plasmapheresis in mechanical jaundice caused by choledocholithiasis, according to many authors, has a pronounced detoxifying effect, improves the prognosis of treatment. But along with this there is still a lot of questions regarding the number of sessions of plasmapheresis in the preoperative and postoperative periods, further research is needed to improve its efficiency by reducing the amount plasma of substitution and opportunities reinfusion patients treated plasma. Hence there is every reason to conclude that this issue requires further consideration.

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#### **КОМПЛЕКСНОЕ ЛЕЧЕНИЕ БОЛЬНЫХ ГНОЙНЫМ ХОЛАНГИТОМ ДОБРОКАЧЕСТВЕННОГО ГЕНЕЗА С ИСПОЛЬЗОВАНИЕМ ПЛАЗМАФЕРЕЗА**

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**Резюме.** Гнойный холангит и возникающий на его фоне билиарный сепсис сопровождаются накоплением в крови множества водорастворимых и альбуминорастворимых токсинов. Анализ публикаций по применению плазмафереза при билиарном сепсисе и септическом холангите свидетельствует о высокой эффективности метода и широких возможностях его применения в клинической практике. Отмечено улучшение состояния больных, уменьшение признаков интоксикации, подтвержденное объективно снижением в крови уровня билирубина, концентрации средних молекул, снижением активности трансаминаз и щелочной фосфатазы.

**Ключевые слова:** гнойный холангит, билиарный сепсис, плазмаферез.