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## ASPECTS OF GRAVITATIONAL SURGERY IN THE TREATMENT OF NON-SPECIFIC ULCERATIVE COLITIS

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## НОСПЕЦИФИК ЯРАЛИ КОЛИТНИ ДАВОЛАШДА ГРАВИТАЦИОН ХИРУРГИЯ АСПЕКТЛАРИ

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## АСПЕКТЫ ГРАВИТАЦИОННОЙ ХИРУРГИИ В ЛЕЧЕНИИ НЕСПЕЦИФИЧЕСКОГО ЯЗВЕННОГО КОЛИТА

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**Резюме.** Мақолада ярали колитнинг стероидга боғлиқ ва стероидга чидамли шакллари даволашда плазмаферездан фойдаланиш бўйича клиник, лаборатор ва инструментал маълумотлар келтирилган. Гормонал қарамлик ва қаршилик НЯК даволашда энг жиддий муаммо ҳисобланади. Ярали колитнинг стероидга чидамли ва стероидга боғлиқ шакллари плазмаферез билан даволаш учун кучли шартлар мавжуд. Қўшимча озонлаш билан қон плазмасини билвосита электрохимий детоксикация қилиш билан плазмаферез иммунологик бузилишларни, сурункали яллиғланишни ва НЯКда эндотоксикозни сифат жиҳатидан тузатишга қодир.

**Калит сўзлар:** носпецифик ярали колит, гормонал қаршилик, гормонал қарамлик, плазмаферез.

**Abstract.** The article presents clinical, laboratory and instrumental data on the use of plasmapheresis in the treatment of steroid-dependent and steroid-resistant forms of ulcerative colitis. Hormonal dependence and resistance is the most serious problem in the treatment of UC. There are strong prerequisites for the treatment of steroid-resistant and steroid-dependent forms of UC by plasmapheresis. Plasmapheresis with indirect electrochemical detoxification of blood plasma with additional ozonation is able to qualitatively correct immunological disorders, chronic inflammation and endotoxemia in UC.

**Key words:** ulcerative colitis, hormonal resistance, hormonal dependence, plasmapheresis.

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**The urgency of the problem.** According to epidemiological studies, there is currently an increase in the incidence of non-specific ulcerative colitis (NUC) worldwide. According to the severity of the course, the frequency of complications and mortality, NUC occupies one of the leading places in the structure of diseases of the gastrointestinal tract (G.A. Grigorieva, N.Yu. Meshalkina, 2017; I.L. Khalif, I.D. Loranskaya, 2019).

Chronic relapsing course of UC, the development of life-threatening complications, the predominant lesion of people of working age, insufficiently effective, and often expensive treatment, determine the relevance of this problem (E.A. Belousova, 2019; F.I. Komarov et al., 2018).

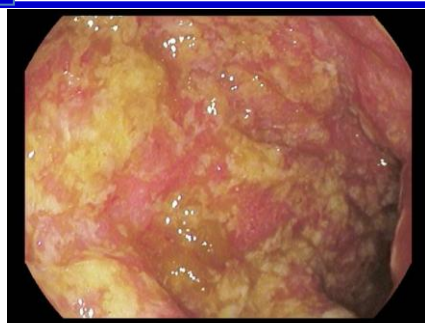
**Purpose of the study.** Improving the results of treatment of steroid-dependent and steroid-resistant forms of ulcerative colitis.

**Materials and research methods.** The main group consisted of 47 patients, the control group - 58 patients. The main and control groups of patients did not differ significantly in gender, age, the ratio of hormone-resistant and / or hormone-dependent forms of UC, the timing of the formation of hormone dependence and / or hormone resistance.

In addition to the course of plasmapheresis with indirect electrochemical oxygenation with additional ozonation (PF with NECHO + O<sub>3</sub>), patients of the main group received 5-ASA preparations at a dose of 2-4 g, depending on the severity of UC and the prevalence of the inflammatory process.

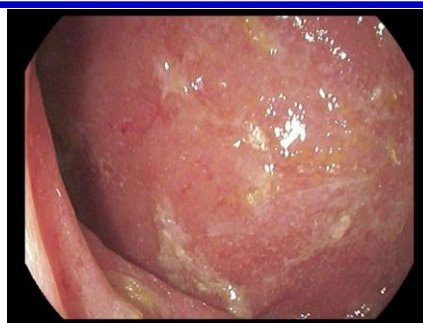
The criteria for the effectiveness of treatment were: reduction or overcoming of resistance to basic therapy, dose reduction or withdrawal of steroids, achievement of stable clinical and endoscopic remission, reduction in the frequency and severity of relapses, regression of systemic manifestations, reduction in the percentage of surgical interventions.

**Research results and discussion.** To substantiate the expediency of including PF with NECHO + O<sub>3</sub> in the treatment of patients with steroid-dependent and steroid-resistant forms of UC, the features of the clinical course of the disease, laboratory parameters and endoscopic picture were studied when using efferent cell technologies in comparison with the control group of patients where the latter were not used.



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Fig. 1. Active course of UC



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Fig. 2. On the 12th day after PF with NECHO+O3



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Fig. 3. On the 20th day after PF with NECHO+O3

Already after 2 courses of PF with NECHO + O3, on the 8th day, in the main group, clinical remission was achieved in 81% of 47 patients, of which: in 4 (9%) of 5 patients with mild the course of the disease, in 27 (57%) of 29 patients with moderate course and in 7 (15%) of 13 patients with severe UC; by the end of the course of PF with NECHO + O3, on the 20th day, in 45 (96%) of 47 patients, of which 11 (23%) of 13 patients with severe colitis. In the control group, clinical remission on the 8th day of treatment was achieved in 31 (53%) of 58 patients, of which: in 7 (12%) of 9 patients with a mild course of the process, in 23 (40%) of 33 patients with moderate course and in 1 (2%) of 16 patients with severe UC; on the 20th day - in 45 (78%) of 58 patients, of which: in 29 (50%) of 33 patients with a moderate course of the inflammatory process and in 7 (12%) of 16 patients with a severe course of UC.

After a course of PF with NECHO + O3, on the 20th day of treatment, in patients of the main group, this indicator was  $5.34 \pm 0.31$  (109/l) with mild UC, and  $5.89 \pm 0.61$  (109/l, in severe course -  $6.09 \pm 0.81$  (109/l, but on the 2nd and 8th days of treatment, which corresponded to the condition after the 1st and 2nd course of PF with NECHO + O3, an increase in the number of leukocytes was determined as a natural response to ongoing therapy, followed by a decrease in indicators to normal values. This was especially noticeable in mild and moderate inflammatory processes against the background of a low level of leukocytes.

In the main group, after a course of PF with NECHO + O3, on the 20th day of treatment, this figure was  $5.38 \pm 0.32$  mm/hour in mild UC,  $6.89 \pm 1.17$  mm/hour in moderate course and  $7.64 \pm 2.69$  mm/h in severe cases. In the control group, at the same time, the ESR level was  $5.56 \pm 0.41$  mm/hour in mild course,  $12.56 \pm 3.37$  mm/hour in moderate course, and  $19.06 \pm 3.37$  in severe course. mm/hour. Moreover, in moderate and severe UC, there was a significant difference in the levels of this indicator in the main and control groups of patients.

A statistically significant decrease in the level of C-reactive protein, and with the achievement of normal numbers, in the main group of patients was noted by the end of the course of PF with NECHO + O3, by the 20th day of treatment; with mild NUC -  $2.03 \pm 0.62$  mg/l, with moderate -  $2.43 \pm 1.04$  mg/l, with severe -  $3.41 \pm 1.3$  mg/l. In the control group, a statistically significant decrease in this indicator was also observed, but did not reach the values corresponding to the norm in moderate and severe UC. So, on the 20th day of treatment, the level of C-reactive protein was  $2.07 \pm 0.58$  mg/l in mild UC,  $6.73 \pm 2.61$  mg/l in moderate UC, and  $19.85$  mg/l in severe UC.  $\pm 3.72$  mg/l.

After treatment with PF with NECHO + O3, on the 20th day of observation, in the main group, during endoscopic examination, positive dynamics was significantly noted: hyperemia and edema of the colon mucosa decreased in all patients, a vascular pattern appeared, mucosal granularity decreased, spontaneous bleeding, there were signs of active epithelialization (Fig. 1-3).

After a course of PF with NECHO + O3, 17 (36%) patients who did not achieve complete clinical and endoscopic remission required the appointment of prednisolone at a dose of 20-30 mg / day, which was 2-3 times less than the average dose of the drug prescribed to patients control group with a similar course of NUC in these terms. Such a course of treatment made it possible to achieve complete remission with the gradual withdrawal of steroids within 1-2 months. By the end of the course of PF with NECHO + O3, the patients were transferred to a maintenance dose of 5-ASA preparations 1-2 g/day. Patients with severe UC continued to be on a maintenance dose of azathioprine 1.5 mg/kg/day for six months.

Unlike patients of the main group, patients in the control group during these periods continued to take high doses of prednisolone, an average of 0.75-1 mg/kg of body weight per day, mesalazine 3-4 g per day, azathioprine 1.5-2.5 mg /kg per day.

Thus, in patients of the main group on the background of PF with NECHO + O3, we received a complete response in 30 (64%) of 47 patients, an incomplete response in 15 (32%) patients, a partial response in 2 (4%) patients.

In patients of the control group, the results of treatment during these periods were significantly worse than in patients of the main group. We received a complete response to corticosteroids and cytostatic therapy in 22 (38%) of 58 patients, incomplete - in 23 (39.5%) patients, partial - in 9 (15.5%) patients, no response - in 4 (7%) of patients.

**Conclusions.** The positive dynamics of general clinical, laboratory parameters and endoscopic picture in patients with steroid - dependent and steroid - resistant forms of ulcerative colitis when using for their treatment a course of plasmapheresis with indirect electrochemical detoxification of blood plasma with additional ozonation indicates its effectiveness in stopping the exacerbation of the disease.

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**АСПЕКТЫ ГРАВИТАЦИОННОЙ ХИРУРГИИ В ЛЕЧЕНИИ НЕСПЕЦИФИЧЕСКОГО ЯЗВЕННОГО КОЛИТА**

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**Резюме.** В статье приведены клиничко-лабораторные и инструментальные данные по применению плазмафереза в лечении стероид-зависимых и стероид-резистентных форм неспецифического язвенного колита. Гормональная зависимость и резистентность – наиболее серьезная проблема в лечении НЯК. Существуют веские предпосылки для лечения стероид-резистентных и стероид-зависимых форм НЯК методом плазмафереза. Плазмаферез с непрямой электрохимической детоксикацией плазмы крови с дополнительным озонированием способен качественно корригировать иммунологические нарушения, явления хронического воспаления и эндотоксикоза при НЯК.

**Ключевые слова:** неспецифический язвенный колит, гормональная резистентность, гормональная зависимость, плазмаферез.