



## Results of surgical treatment of colorectal cancer using fast-track

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### ARTICLE INFO

#### *Article history:*

Received February 2024  
Received in revised form  
15 February 2024  
Accepted 15 March 2024  
Available online  
25 April 2024

#### *Keywords:*

colorectal cancer,  
laparoscopic resection of the  
colon,  
fast-track surgery.

### ABSTRACT

Today, colorectal cancer remains the most common malignant neoplasm, the main method of which is surgical treatment. During the study, patients were divided into 3 groups: group 1 – open interventions (134 patients), group 2 – laparoscopic interventions (104 patients), and group 3 – open interventions with accelerated rehabilitation (64 patients). In the study group of patients, early postoperative complications were absent in 74,4%, and in the control group – in 75,37%. The average bed day in the study group was  $8,02 \pm 0,157$  versus  $8,8 \pm 0,246$ , that is, the difference was approximately one-bed day.

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DOI: <https://doi.org/10.47689/2181-1415-vol5-iss2-pp56-61>

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## Fast-track yordamida kolorektal saratonni jarrohlik davolash natijalari

### ANNOTATSIYA

#### **Kalit so'zlar:**

yo'g'on ichak saratoni,  
yo'g'on ichakning  
laparoskopik rezeksiyasi,  
tezkor jarrohlik.

Bugungi kunda kolorektal saraton eng keng tarqalgan malign neoplazma bo'lib qolmoqda, uning asosiy usuli jarrohlik davolashdir. Tadqiqot davomida bemorlar 3 guruhga bo'lingan: 1 guruh – ochiq aralashuvlar (134 bemor), 2 guruh – laparoskopik aralashuvlar (104 bemor) va 3 guruh – tezlashtirilgan reabilitatsiya bilan ochiq aralashuvlar (64 bemor). Bemorlarning tadqiqot guruhida operatsiyadan keyingi erta asoratlar 74,4%da, nazorat guruhida 75,37%da kuzatilmagan. Tadqiqot guruhidagi o'rtacha yotoq kuni  $8,8 \pm 0,246$ ga nisbatan  $8,02 \pm 0,157$ ni tashkil etdi, ya'ni farq taxminan 1 yotoq kuni edi.

## Результаты хирургического лечения колоректального рака методом fast-track

### АННОТАЦИЯ

#### **Ключевые слова:**

колоректальный рак,  
лапароскопическая  
резекция толстой кишки,  
ускоренная хирургия.

Колоректальный рак продолжает быть наиболее часто встречающимся злокачественным новообразованием, при этом хирургическое вмешательство является основным методом его лечения. В рамках исследования пациенты были разделены на три группы: первая группа подверглась открытым хирургическим вмешательствам (134 пациента), вторая группа – лапароскопическим вмешательствам (104 пациента), и третья группа – открытым вмешательствам с программой ускоренной реабилитации (64 пациента). В группе с открытыми вмешательствами ранние послеоперационные осложнения не наблюдались у 74,4% пациентов, в то время как в контрольной группе этот показатель составил 75,37%. Средняя продолжительность пребывания в больнице в основной группе составила  $8,02 \pm 0,157$  дня по сравнению с  $8,8 \pm 0,246$  дня в контрольной группе, что указывает на разницу в примерно один койко-день.

Colorectal cancer is considered one of the most common malignant tumors. Back in 2017, it ranked 3rd in cancer incidence and 4th in mortality; already in 2019, in world statistics, colorectal cancer ranked 3rd among men and 2nd among women, while mortality was in 2nd place [1, 6]. According to Global Cancer Statistics, in 2019, colorectal cancer accounted for 10,2% of all malignant neoplasms, while in the Republic of Uzbekistan, among malignant neoplasms, colorectal cancer accounted for 6,7% [8]. Also, according to Global Cancer Statistics, in 2020, the mortality rate from colorectal cancer was 9.4%, and the number of new cases registered was about 2 million [2, 3, 4].

Today, surgery remains the main treatment method for colorectal cancer. Considering that in most underdeveloped and developing countries traditional surgical interventions are still performed, in the postoperative period the incidence of life-threatening complications remains at a high level [5, 7].

The use of modern minimally invasive technologies in surgery has made it possible to increase the efficiency of surgical treatment of patients with colorectal cancer, on the one hand, by minimizing surgical trauma and, on the other hand, through early rehabilitation of patients, which led to the creation of a multimodal early recovery program or the so-called “accelerated rehabilitation of patients” after operations [9].

The use of the fast-track surgery protocol leads to a reduction in the body's stress reactions, a decrease in the dysfunction of internal organs, which significantly reduces the recovery time after surgery, and reduces hospital bed days, which leads to a reduction in the cost of treatment [9, 10].

The use of minimally invasive intervention methods, as well as the role and place of the developed “accelerated rehabilitation” program in patients with colorectal cancer, taking into account the characteristics of pre-, intra- and postoperative management, is an urgent problem of modern oncology.

**The purpose** of the study was to optimize the treatment of patients with colorectal cancer through the use of minimally invasive interventions and accelerated rehabilitation.

#### **MATERIAL AND METHODS OF RESEARCH**

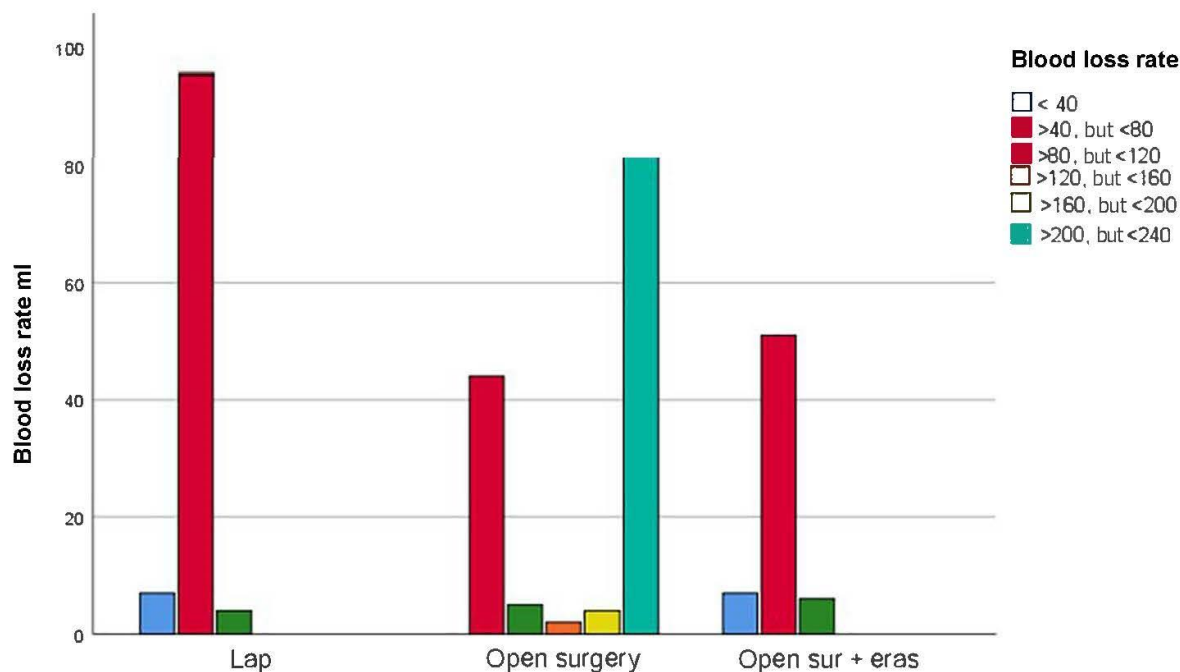
The study included 302 patients who received treatment at the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology. 134 patients were selected into the open intervention group, 104 patients into the laparoscopic intervention group, and 64 patients into the open surgery group using an fast-track protocol. For convenience and completeness of the analysis, during statistical processing of the material, patients were combined into the study group (168 patients who underwent either laparoscopic interventions or open operations using an accelerated rehabilitation protocol) and 134 patients in the control group.

All patients underwent the following studies: rectoscopy, chest x-ray, ultrasound of the abdominal cavity, pelvis and inguinal lymph nodes, colonoscopy with biopsy (biopsy materials are stored in paraffin blocks), MRI of the pelvic organs, digital rectal examination, general blood test, biochemical blood test (urea creatinine, ALT/AST, alkaline phosphatase, total protein and albumin, glucose), general urine test, coagulogram, CEA, CA 19.9, ECG. Also, if necessary, an examination was carried out by narrow specialists. Assessment of general condition according to the ECOG scale.

By gender, the study group included 89 men and 79 women, the control group – 79 men and 55 women ( $p = 0,299$ ). The average age of patients in the study group was  $56,82 \pm 1$  year, in the control group it reached  $56,33 \pm 1,054$  years ( $p = 0,924$ ), which also indicates the absence of a significant difference in this indicator, as well as in the indicators of the presence of certain concomitant diseases ( $p = 0,104$ ).

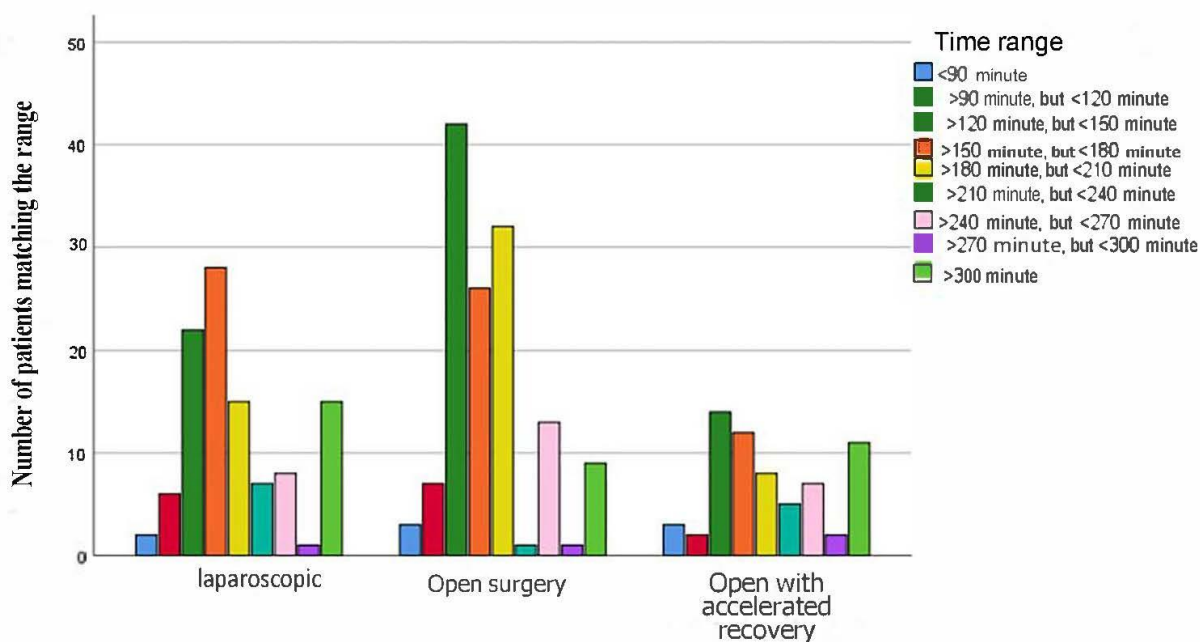
#### **RESULTS**

In the combined group of laparoscopic and open interventions using rapid recovery protocols, the average blood loss was  $56,8988 \pm 1,00642$  ml, in the group of open operations without using a rapid recovery protocol –  $151,5224 \pm 5,52378$  ml, the difference in indicators was significant ( $p = 0$ ), however, Livigne's test for equality of variances indicated the significant significance of the results, and therefore an additional test was carried out for the Mann-Whitney U test, which confirmed the reliability of the results of the Student's test ( $p = 0$ ) (Figure 1).



**Fig. 1. Comparison of blood loss levels**

According to the analysis, it was found that the average time of surgical interventions in the study group was  $248,0952 \pm 29,34965$  minutes versus  $276,7164 \pm 46,73971$  minutes. Livigne's test for equality of variances did not reach significance, thus a normal distribution between groups can be recognized, but the statistical significance of the differences was not confirmed ( $p = 0,105$ ) (Figure 2).



**Fig. 2. Range of operation duration in the study groups**

When analyzing early postoperative complications according to the Clavien-Dindo classification, the Pearson criterion was also performed for the control and study groups, combined according to the above parameters

In the study group of patients, early postoperative complications were absent in 74.4%, and in the control group – in 75.37%.

Discussions. The study shows that neither in the group of patients who underwent laparoscopic interventions nor in the group of patients who underwent laparotomic surgery, the level of blood loss did not exceed 120 ml. The most commonly reported level of blood loss during laparoscopic interventions was in the range from 40 to 80 ml, and blood loss levels were similarly distributed during open interventions using accelerated recovery protocols. At the same time, the most common range of blood loss in patients who underwent open interventions when analyzing the data was from 200 to 240 ml; all observed differences were statistically significant ( $p = 0$ ).

The most common range of operative time spent was 150 to 180 minutes, with open procedures ranging from 120 to 150 minutes, and open procedures using an accelerated recovery protocol also ranging from 12 to 150 minutes. The differences approached statistically significant ( $p = 0,056$ ) and based on the totality of data analyzes performed, it can be stated that significant differences between the study and control groups of patients are due to a significantly longer time of surgical interventions using laparoscopic access.

According to the results of the analysis, a significant difference in the observation of intraoperative complications was established: in the study group, various intraoperative complications occurred in 30,95% of patients, in the control group – in 32,08% ( $p = 0,045$ ), which indicates a significantly lower number of intraoperative complications in the study group, despite the longer operating time.

### CONCLUSION

Carrying out operations using laparoscopic access or open operations using the developed accelerated rehabilitation protocol can reliably speed up the rehabilitation of patients. Thus, the average bed day in the study group was  $8,02 \pm 0,157$  versus  $8,8 \pm 0,246$ , that is, the difference was approximately 1 bed day. When conducting this analysis, the Livigne criterion reached significance, which indicated the heterogeneity of the data and required the Mann-Whitney U test, the value of which, in turn ( $p = 0,004$ ), confirmed the significance of the differences in the average bed-day indicators.

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