

## THE SIGNIFICANCE OF PREOPERATIVE RADIATION THERAPY IN THE COMPREHENSIVE MANAGEMENT OF SURGICALLY REMOVABLE RECTAL CANCER

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**The purpose of the work:** The aim of the study is to examine the role of preoperative radiotherapy in the combined treatment of resectable rectal cancer.

**Materials and methods.** The master's thesis is based on the results of examination and treatment of 118 patients with resectable rectal cancer, who underwent surgical or combined treatment in the clinic of the Samarkand Branch of the Republican Scientific and Practical Medical Center and R in the period 2021-2024.

The results of all research methods used in clinical practice for the management of patients diagnosed with rectal cancer will be retrospectively analyzed. The main and control groups will be formed both retrospectively and prospectively, depending on the nature of the formulation of the specifically solved problems of the dissertation. Statistical processing of the received information will be carried out using standard statistical research procedures on computer equipment.

### **Research objectives:**

In patients of the study group, surgical intervention in the amount of total mesorectumectomy was supplemented with preoperative irradiation at a dose of 25 Gy. This method of combined treatment of patients with resectable rectal cancer has been used in our center since 2023. It combined modern principles of radiation therapy and modern methods of surgical treatment. The main differences between radiation therapy and previously used techniques are:

The main difference in the surgical intervention technique was the principle of “sheathing” - removal of the tumor and surrounding tissue within the existing anatomical layers in a sharp way under direct visual control. A mandatory aspect of the operation was the high ligation of the central vessels - the inferior mesenteric artery (at the base or below the origin of the left colon artery) and the vein (below the ligament of Treitz).

**Conclusions:** Intensive preoperative radiotherapy at a dose of 25 Gy (equivalent to 40 Gy with traditional fractionation) despite an increase in the number of general to 35% (grades 1-2 - 31.7%; grade 3 - 3.3%) and local to 13.3% (1-2 degrees - 10%; 3 degrees - 3.3%) of

radiation reactions, was realized in all patients, in no case did it become a reason to transfer the operation abroad at an optimal time for it, and did not increase the number of postoperative complications. Radiation therapy changed the proliferative activity of tumor cells, significantly reducing the level of proliferation proteins (PCNA before treatment  $59.2 \pm 2.2$ , after treatment  $29.6 \pm 2.1$ ,  $p=0.0003$ ; cyclin A before treatment  $23.7 \pm 2.0$ , after treatment  $18.9 \pm 1.5$ ,  $p=0.03$ ).

**Keywords:** radiotherapy, rectal cancer, surgery.