

## Features of early and deferred results of endothelial changes in patients with rectal cancer

Laura Pak, Zukhra Manambaeva, Yoshihiro Noso, Daniyar Raisov, Diana Pak, Aigerim Temirkhanova, Aimara Omirtaeva, Akmaral Kairkhan, Aigerim Orazbaeva, Nurgul Zhumakanova, Daulet Berikbol and Nurlybek Kerimkhanuly  
Semey State Medical University, Kazakhstan

**The goal:** The identification of the presence and degree of endothelial dysfunction in patients with rectal cancer in the early and late periods after treatment. The study involved 47 patients with stage III clinical colorectal cancer (TNM), subjected to the combined therapy. Investigated: circulating endothelial cells, von Willebrand factor, metabolites of nitric oxide (NO); endothelium-dependent vasodilation.

**Results:** The excess of circulating endothelial cells over the control group - 4.25 times ( $p < 0.001$ ), excess WF - 2.11 times ( $p = 0.005$ ). Revealed high levels of NO metabolites, differences with the control - 2.29 times ( $p = 0.005$ ) reduction in the average value EDVD differences with the control - 1.92 times.

The excess of CE after surgery was 1.74 times ( $p = 0.01$ ), compared to control excess - 7.42 times ( $p < 0.001$ ). WF increases, which reflected the endothelial damage in pathology and intervention, abuse aftercare - 2.52 ( $p = 0.003$ ). Registered growth of NO metabolites. Differences with the control of postoperative 2.68 ( $p = 0.002$ ). In the postoperative period the average value decreased EDVD differences with the control of 2.35 times ( $p = 0.004$ ).

In the long term, 1 year after surgery, showed a trend reduction of the degree of dysfunctions, not reaching full normalization. Differences were found mainly in the number of circulating endothelial cells. The excess over the control of this indicator was 3.85 times ( $p = 0.023$ ). At the same time, the average value of the indicator with respect to the state after the intervention decreased almost 2-fold ( $p = 0.027$ ).

A significant excess (2-fold,  $p = 0.031$ ) over the control group was determined by the content of von Willebrand factor. Marked differences were noted on the content of NO metabolites (2.09-fold,  $p = 0.025$ ). Differences in the level EDVD decreased to 1.58 times ( $p > 0.05$ ) due to a statistically significant increase relative to the level of the postoperative period.

**Conclusion:** rectal cancer the presence of endothelial dysfunction was observed before and after treatment. The greatest expression of disorders, is to increase the level of circulating endothelial cells, von Willebrand factor and reduction of vasodilatation, achieved after surgery and then gradually offset. With the development of recurrence and metastasis, the compensation does not occur, thereby increasing the risk of thrombotic complications.

### Biography:

Laura Pak graduated from high school in 2004 and in the same year entered to the Semey State Medical University in the specialty "General medicine". In 2010 she graduated from the University and received a degree in "Medical doctor". In the same year she was enrolled in the internship to the SSMU in 2011, at the end of the internship was certified "physician". From 2011 to 2013 she held a residency at the Department of Oncology and Visual Diagnostics and received a certificate "Oncologist." From 2013 till the present she has been studying in doctoral PhD, 3<sup>rd</sup> course in the SSMU, specialty is "Medicine". The main directions of her training in doctoral studies: oncology, namely malignant tumors of the rectum.