# Reactive carbonyl compounds of protein in patients' blood after surgical treatment of breast cancer

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**Introduction.** The problem of breast cancer (BC) is one of the important and complicated in oncology. In this aspect, there is a significant amount of interest in the study of oxidative processes, since their disorders can act as one of the pathogenetic factors of carcinogenesis.

**Aim of the study:** To study the Reactive carbonyl compounds of proteins (RCCs) in plasma and in erythrocytes of blood of the BC patients after surgical treatment.

**Materials and methods:** The blood of 20 women with BC was examined, which have I-IIIa stages after surgical treatment in the volume of radical resection or radical mastectomy performed at the first stage of treatment. The control group consisted of practically healthy women (n = 15). The level RCCs in erythrocytes and in blood plasma was determined by the method of Levine R.L et al. (1990).

**Resultsof the study:** In erythrocytes of BC patients with I stage, there was a slight decrease in the percentage of RCCs. At the same time, an increase of RCCs was observed in II stage BC patients (by 50% compared to control, $p < 0.05$). The level of RCCs in erythrocytes of BC patient's blood with III stage was 2 times lower than the control. In blood plasma of BC patients with I stage the significant increase in RCCs was observed (3 times compared with the control). In BC patients with II stage, this indicator exceeded control by 70-75% ($p < 0.05$), whereas in patients with III stage of BC, the content of RCCs did not differ significantly from control.

**Conclusions:** These data suggest the development of carbonyl stress in the body of BC patients. Surgical removal of the tumor in breast cancer does not eliminate the conditions for the oxidative modification of proteins.

## Biography

Sabina Zhumakayeva works at Medical University of Karaganda as 1-year doctoral student of the Oncology Department. Education (university and graduation year): Karaganda State Medical University, 2015. Faculty: General Medicine. Specialization, postgraduate education: oncologist, radiodiagnosis, including ultrasound, CT, MRI, X-ray. Work experience in the specialty: over 3 years. Academic degree and title: Master of Medical Sciences. Scientific works, copyright certificates: 9 publications, 1 certificate of state registration of the object of intellectual property.

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