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## **Intraoperative radiation therapy in the complex treatment of localized breast cancer: Own experience**

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**Introduction:** The combination therapy of localized breast cancer (LBC) with external beam radiation therapy (EBRT) is accompanied by a number of particular problems and needed more time to treat patients. Goals, to demonstrate that intraoperative radiotherapy (IORT) would be modest compared to the external beam radiation therapy (EBRT).

**Methods:** We performed retrospective analysis of short-term outcomes of 100 breast cancer patients, who underwent breast-conserving surgery (BS) combined with radiotherapy (RT) (2017). patients are in the under 62±3, the tumor size was 2.5 cm with luminal biological subtype of tumor. The Intraoperative radiotherapy (IORT) was carried out using «INTRABEAM PRS 500», the external beam radiation therapy (EBRT) was conducted with the help of «Electra Synergy».

**Results:** The patients were divided into 2 groups. The first group consists of 42 breast cancer patients with stage I and 8 breast cancer patients with stage II. The BS was combined with the IORT on «INTRABEAM PRS500». A single dose in first group ranged from 12 to 20 gy. The overall time of BS + IORT was 70-120 minutes. At the first group the post radiotherapy skin is not revealed. The average time of the treatment is approximately 35±4 days. The second group of patients (41 breast cancer patients with stage I, 9 patients with stage II) were followed by external beam radiotherapy on «Electra Synergy» after the BS during 3-5 weeks after the surgery. The single tumor dose was 2,5 gy. Time of EBRT ranged from 50 to 80 minutes. The post-operative drawbacks connected with radiotherapy are epidermitis- 88%, dermic ulcers – 0.1%. The average time of the treatment is approximately 35±4 days.

**Conclusions:** The analysis of the results showed that the using of IORT slightly increases the time of the operation, completely eliminates the possibility of skin manifestations of radiation therapy. Treatment regimen using IORT has several advantages and can be considered as an alternative treatment option in a strictly selected category of patients with LBC.

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