Effect of radiotherapy on sphincter-sparing operations rate in rectal cancer patients

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Introduction: Neoadjuvant radiotherapy (RT) is widely used as a standard treatment option for distal rectal cancer (T3-T4N + /-). Using RT leads to a decrease of tumor size (downsizing) and reduction of disease stage (downstaging), which increases the number of sphincter-sparing operations (SSO) in patients who were previously candidates for abdomino-perineal excision.

Methods: A multicenter randomized trial of treatment patient with distal rectal cancer using the RT (National Cancer Institute, Mykolaiv and Chernihiv regional oncological hospitals) was conducted since 2008 until 2012. Rate of SSO and factors influencing their levels depending on the RT – shot-course 5 × 5Gy (Group 1) or long-course 15 × 2Gy (Group 2) were assessed.

Results: One hundred and seventy two patients with T2-3N +/-M0 distal rectal cancer had been enrolled. In Group 1 the number of patients was 127, in Group 2 - 45 patients. SSO in Group 1 comprised 43.3% in Group 2 - 91.1% (p> 0.05). A significant increase of SSO rates in women (64.5%) than men (48.9%) was observed (p = 0.04). Age, stage, tumor differentiation, the type of spread didn’t affect the SSO rate.

Conclusion: Treatment of patients with stage II-III distal rectal cancer using long-course 15 × 2Gy RT increases SSO rates. Women undergo SSO more frequently than men.