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Is Adjuvant Chemotherapy Necessary in the Management of Clinically Staged T3N0 Rectal Adenocarcinoma?

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INTRODUCTION: Findings From the European Organization for Research and Treatment of Cancer (EORTC) 22921 randomized study do not support the application of adjuvant chemotherapy after neoadjuvant chemoradiation and proctectomy for locally advanced rectal tumors. We aimed to examine the role of perioperative multimodal therapies.

METHODS: From 2006 to 2014, the National Cancer Database was used to identify patients with cT3N0M0 rectal adenocarcinoma.. Patients were divided into 3 groups: surgery alone (SA)neoadjuvant chemoradiation before surgery (NCR), and neoadjuvant chemoradiation, surgery, and adjuvant chemotherapy (NCRAC). Multivariate risk-adjusted analysis and Cox proportional hazard modeling was performed.

RESULTS: Of 16,801 patients identified with cT3No rectal adenocarcinoma 1,918 (11.4%) received SA, 10,592 (63%) received NCR, and 4,291 (25.5%) received NCRAC, Pathologic modal involvement was appreciated in 16% of SA, 17% of NCR, and 25% of NCRAC, ($p<0.01$), R0 resection occurred more frequently in NCR (odds ratio [OR] 1.35, 95% CI 1.09-1.67, $p < 0.01$) and NCRAC (or 1.51, 95% CI 1.18-1.93, $p < 0.01$) compared with SA. Down-staging to pathologic stage I was present in 17% of SA and 65% of patients who received neoadjuvant chemoradiation NCRAC was associated with superior 5-year overall survival compared with NCR (OR 1.37, 95% CI 1.25-1.54, $p < 0.01$) and SA (OR 2.17, 95% CI 1.92-2.44, $p < 0.01$). Patients with pathologic stage II (OR 1.56, 95% CI 1.29-1.92, $p < 0.01$) and stage III disease (OR 1.33, 95% CI 1.10-1.61, $p < 0.01$) treated with NCRAC demonstrated superior 5-year overall survival compared with NCR.

CONCLUSIONS: Our findings suggest a survival benefit with the inclusion of adjuvant chemotherapy after neoadjuvant chemoradiation and proctectomy for rectal cancer.