

Adjuvant Chemoradiation Therapy for Resected Gastric Cancer: A Population-based Study

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Background: Results from a clinical trial published in 2001 documented improved survival in gastric cancer surgery patients receiving post-operative (adjuvant) chemoradiation (CRT), compared to those that received surgery alone. Findings published in 2012 showed sustained benefits of adjuvant CRT with a median follow-up of 10.3 years. Our study was initiated to examine whether this same benefit would be evident in a population-based setting using statewide California Cancer Registry (CCR) data. If so, the broad representation of gastric cancers in the entire California population would support generalization of the clinical trial findings to a large and diverse population setting.

Methods: Data from the statewide CCR, composed of the three most populated SEER registries, for patients diagnosed with stage I-IIIc gastric cancer, age 24-88 years from 2004-2012 were analyzed and compared with individual data from the clinical trial (SWOG9008) for overall survival using Cox proportional mortality hazards regression. Covariates included age, sex, race/ethnicity, T-stage, number of positive lymph nodes, diffuse vs. intestinal histology subtypes and the primary tumor location.

Results: Among the 2,046 CCR patients who underwent gastric cancer resection, 1,570 received surgery only, while 476 (23.3%) also received CRT. Overall survival benefits were evident for patients receiving combined modality treatment versus surgery alone for both the clinical trial and the CCR study [HR = 0.72 (95%CI = 0.59-0.87) and HR = 0.54(95%CI = 0.45-0.63), respectively]. Other results include evidence of significant overall survival benefits for patients who were younger, diagnosed with lower T-scores, having fewer positive lymph nodes, and those with non-diffuse histology.

Conclusions/Discussion: The overall survival benefit for adjuvant CRT for stage I-IIIc gastric cancer was concordant with the clinical trial finding, with the CCR finding providing generalizability to the California population that was not available in the clinical trial. This research was possible because of the diligent work of cancer registrars throughout California.