The value of chemotherapy in stage II colon cancer: Much less than we thought

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Background: The use of adjuvant chemotherapy in stage II colon cancer patients remains controversial. We sought to evaluate the real effectiveness of chemotherapy on stage II colon cancer as well as select suitable patients for additional treatment.

Methods: Patients with stage II colon cancer during 1988 to 2010 were identified from the Surveillance, Epidemiology, and End Results (SEER) database. The competing-risk survival regression model and propensity score matching method were used to evaluate the colon cancer specific death (CCSD) and non-CCSD. Also, in order to identify more suitable candidates for chemotherapy, a competing-risk nomogram model was constructed. Risk score (RS) was calculated according to the model.

Results: 53,617 patients with stage II cancer were included, 25.92% have received chemotherapy, and 74.08% were without chemotherapy. In total, 19.56% and 23.99% of patients died of CCSD and non-CCSD, respectively. Univariate and multivariate analyses showed receiving chemotherapy appears to be associated with more CCSD and less non-CCSD (HR 1.19, 95%CI1.14-1.24; HR 0.57, 95%CI 0.54-0.60, respectively), even after adjustment for covariates and propensity score weighting. A competing-risk nomogram was established and the model was relatively good with a C-index of 0.661. Based on the RS, different risk stage could only predict prognosis but fail to predict the benefit from chemotherapy.

Conclusions: No survival benefit was observed for patients with stage II cancer with chemotherapy. The value of chemotherapy is much less than we thought.

Legal entity responsible for the study: Second Affiliated Hospital of Zhejiang University School of Medicine.

Funding: Has not received any funding.
Disclosure: All authors have declared no conflicts of interest.