MedicalXpress

Tumor location in colorectal cancer may influence survival

February 24 2015

The two halves of the human colon have different embryonic origins and gene expression patterns, and these differences may also play a role in cancer biology, according to a study published February 24 in the *JNCI: Journal of the National Cancer Institute*.

To determine if there is an association between right or left colon primary tumor location and prognosis in metastatic colorectal cancer (CRC), as well as efficacy of the antiangiogenic agent bevacizumab, Fotios Loupakis, M.D., Ph.D. of the University of Southern California Norris Comprehensive Cancer Center, Los Angeles, and U.O. Oncologia Medica, Azienda Ospedaliero-Universitaria Pisana, Istituto Toscano Tumori, Pisa, Italy, and colleagues, used data from a prospective pharmacogenetic study and two randomized phase III trials. Overall survival (OS) and progression-free survival (PFS) were assessed in 2027 patients with metastatic CRC according to tumor location. Given the prognostic impact of BRAF mutational status and mucinous histology and their association to right-sided CRC, the prognostic impact of primary tumor location was also assessed in a subgroup of 200 patients from the prospective PROVETTA study, with full information on BRAF status and details on histology.

Over the three studies, about 70% of patients had left-sided primary tumors and had better survival outcomes than those with right-sided tumors. In the PROVETTA study, right-sided tumor location also had a negative prognostic value independent of BRAF mutation status or histological type. However, the efficacy of bevacizumab was

independent of tumor location, although right-sided tumors were associated with development of chemoresistance, suggesting biological differences.

The researchers point out that the analysis was exploratory and that data on BRAF mutation status and mucinous histology were not available from the two randomized trials. However, they conclude that "...side of origin could be of added value in clinical decision-making, and should be considered an important stratification factor for future randomized trials."

In an editorial, Howard S. Hochster, M.D., notes that the study was of patients with metastatic disease and therefore may not apply to patients with resected primary tumors. In addition, because this was a pooled analysis of three studies, there were no untreated control patients and selection bias may have influenced the results. However, Dr. Hochster concludes that "This interesting analysis gives rise to some important and testable biological hypotheses."

More information: *JNCI J Natl Cancer Inst* (2015) 107(3): dju427. DOI: 10.1093/jnci/dju427

Provided by Oxford University Press