Utility of Biomarkers for Predicting Colorectal Cancer Survival Depends on Tumor Location

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Expert Perspective:
“We’ve seen prior research showing that the location of a colorectal cancer tumor can help predict a patient’s survival, and this study adds another layer of information that can help further personalize treatment,” said ASCO Expert Lynn Schuchter, MD, FASCO.

ALEXANDRIA, Va. – A large population-based study suggests that the utility of certain types of biomarkers, known as tumor-infiltrating lymphocytes (TILs), to predict colorectal cancer survival depends on where the tumor originates in the body. Although prior research has shown an association between high TIL density and longer survival for patients with colorectal cancers, according to the authors this study is the first to examine the prognostic impact of TILs in regards to tumor location. The study will be presented at the upcoming 2017 ASCO-SITC Clinical Immuno-Oncology Symposium in Orlando.

Key Findings
In each tumor tissue specimen, researchers assessed the density (total number) of three different types of TILs: cytotoxic T cells, regulatory T cells, and natural killer (NK) or natural killer T (NKT) cells. Overall, high density of all three types was associated with improved five-year survival, regardless of primary tumor location. This association was independent of patient age, cancer stage and other factors.

However, the prognostic impact of specific types of TILs differed by tumor location. High density of regulatory T cells was associated with longer survival for patients with rectal tumors, but not for those with either left-sided or right-sided colon tumors. High density of cytotoxic T cells predicted longer survival for patients with right-sided tumors, but not for those with either left-sided colon tumors or rectal tumors. The prognostic impact of NK or NKT cells did not differ by tumor location.
“This study suggests we may need to give more weight to certain prognostic biomarkers based on tumor location,” said lead study author Jonna Berntsson, MD, a PhD student at Lund University in Sweden. “But more research is needed before we can recommend any change in treatment planning.” Testing for TILs is not yet part of routine colorectal cancer care.

In utero, different segments of the colon develop from different parts of the embryo – which is the reason the left and right sides are biologically different. Prior studies have reported on genetic and clinical differences between colorectal tumors that begin on the left side versus the right side of the colon, including poorer survival for patients with right-sided cancers.

The Study
The researchers analyzed tumors from 557 patients newly diagnosed with colorectal cancer who were enrolled in the Malmö Diet and Cancer study. The primary goal of this prospective study was to investigate associations between various dietary factors and cancer incidence. The Swedish study enrolled 30,446 participants between 1991 and 1996. Data on adjuvant treatment were available for 126 patients with stage III colorectal cancer, of whom 61 had received adjuvant chemotherapy.

About Colorectal Cancer
Colorectal cancer is the third most common cancer in both men and women worldwide. In the United States alone, an estimated 95,500 new diagnoses of colon cancer and 39,900 diagnoses of rectal cancer are expected in 2017. More than 50,000 deaths due to colon cancer will occur in the United States this year.

Research Funding
This study was supported by grants from the Swedish Cancer Society, the Swedish Research Council, the Swedish Government Grant for Clinical Research, the Gunnar Nilsson Cancer Foundation, the Mrs. Berta Kamprad Foundation, and Lund University Faculty of Medicine and University Hospital Research Grants.

View the full abstract.

For your readers:

- Guide to Colorectal Cancer
- Tumor Marker Tests
- Location Matters When it Comes to Colorectal Cancer: Research From the 2016 ASCO Annual Meeting

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View the disclosures for the News Planning Team.

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About the Society for Immunotherapy of Cancer:

Established in 1984, the Society for Immunotherapy of Cancer (SITC) is the world’s leading non-profit organization of medical professionals dedicated to improving cancer patient outcomes by advancing the development, science and application of cancer immunotherapy and tumor immunology. SITC is comprised of influential basic and translational scientists, practitioners, healthcare professionals, government leaders and industry professionals from around the globe. Through educational initiatives that foster scientific exchange and collaboration among leaders in the field, SITC aims to one day make the word “cure” a reality for cancer patients everywhere.

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