Precision medicine can widen cancer care options: studies (Update)

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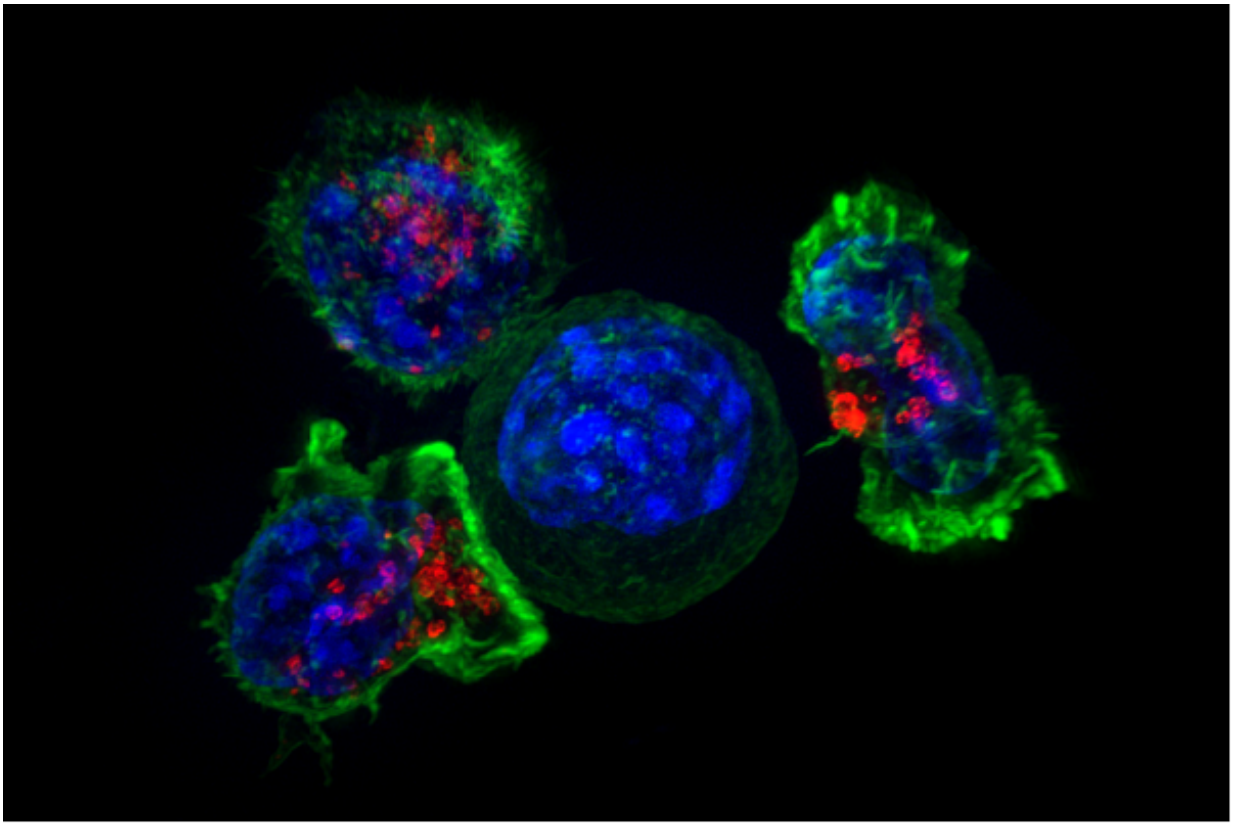

Killer T cells surround a cancer cell. Credit: NIH

Using a patient's individual tumor biomarkers to determine the best treatment can improve success rates, studies showed Saturday.

Unlike chemotherapy and radiation therapy, targeted medicine allows to preserve healthy cells.

This approach, especially immunotherapy, which boosts the immune system to destroy tumor cells—is revolutionizing oncology, according to the study released at the annual meeting of the American Society of Clinical Oncology (ASCO).

Scientists hailed "encouraging" preliminary results of a Phase 2 clinical trial detailed at the world's largest conference on cancer meeting this weekend in Chicago.

Of the 129 participants, 29 patients with a total 12 kinds of advanced cancers responded well to molecules that have not been approved for treatment of these tumors by the Food and Drug Administration.

Promising responses observed in four cancer types, including carrier-specific molecular alterations, have already helped widen the cohort of patients participating in this clinical trial, the researchers said.

"With genomic testing of tumors becoming increasingly available, studies such as ours will help more patients benefit from precision medicine approaches," said lead study author John Hainsworth, senior investigator at Sarah Cannon Research Institute in Nashville.

"Although it is still early to draw conclusions, our findings suggest that, for example, HER2-targeted therapy could be expanded beyond the current indications of HER2-positive breast and gastric cancers."

Mutation in the HER2 gene favors the growth of cancer cells.

The most promising results of this approach have been reported in patients with HER2 mutation, seven out of 20 suffering from colorectal

cancer, three out of eight with bladder tumors and three out of six biliary tract cancer.

They all showed a reduction of at least 30 percent of their tumor. Based on the data, researchers recruited more patients for the study, which is ongoing and expected to reach 500 participants.

Keeping cells healthy

Another group of patients with lung cancer with genetic mutations in the BRAF gene, which regulates proteins involved in the processes of division and cellular differentiation, has also been expanded, given the encouraging data.

A meta-analysis of 346 Phase 1 experimental trials with more than 13,000 patients also presented at ASCO showed similar results.

In 58 of the precision medicine studies, cancerous tumors shrunk by more than 31 percent when the molecules used for the treatment specifically targeting the weaknesses of the tumor, against 5.1 percent when that was not the case, said lead study author Maria Schwaederle, an expert on personalized cancer therapy at the University of California, San Diego.

"Targeted drugs in and of themselves were not effective. They absolutely need to be given to the right patients," Schwaederle said.

"A biomarker-based approach was the most significant independent predictor of improved outcomes in Phase I studies."

Certain types of biomarkers triggered even higher response rates for those patients treated via a personalized approach—42 percent, against 22.4 percent for those chosen via protein expression.

Sumanta Kumar Pal of City of Hope National Medical Center, who did not take part in the research, said the study also "underscores the need to explore this genomic-based testing and treatment approach in a learning environment, like a clinical trial."