

Therapeutic vaccine shows promise against a range of cancers

October 1 2018, by Serena Gordon, Healthday Reporter



(HealthDay)—A personalized vaccine held an aggressive group of

cancers in check among more than half of patients who received it in a small, preliminary trial, researchers report.

HER2-positive cancers are cancers that have too much of the HER2 protein on their surface. In that setting, a [cancer](#) can grow rapidly and be more likely to spread to other areas of the body. Areas known to have HER2-positive cancers include the breasts, bladder, pancreas, ovaries and stomach.

Using the patients' own blood cells, researchers at the U.S. National Cancer Institute modified immune cells and created personalized vaccines to target HER2-positive cancers throughout the body. A benefit was seen in people with cancer in the stomach, colon and ovaries, said study author Dr. Jay Berzofsky.

The vaccine "was safe in humans without any acute or delayed side effects, and clinical benefit was observed in six of 11 patients whose data were available for analysis," he said. Berzofsky is the chief of the vaccine branch at the Center for Cancer Research at the National Cancer Institute.

However, the purpose of the early study was only to see what dose of the vaccine should be given and that such a dose isn't toxic, according to Dr. Otis Brawley, chief medical officer of the American Cancer Society.

Brawley said it's a good sign to see an apparent benefit in a phase 1 trial, but cautioned that the research is "incredibly early. It's too early to start jumping for joy. They show some clear evidence of a benefit, and it's a good investment to pursue this lead."

Berzofsky said the researchers don't know the exact mechanism behind the vaccine's success, but are continuing research to better understand how the vaccine works.

The study included 11 people given more than the lowest dose of the vaccine who were able to be evaluated. Six people—54 percent—showed a benefit from the vaccine.

One patient with ovarian cancer had a complete response that lasted 89 weeks. A complete response means that the cancer can't be found anymore with blood or imaging tests, Brawley said.

Another patient—this one with gastroesophageal cancer—had a partial response that lasted for months, the researchers said. Partial response means that the cancer has been reduced by 50 percent or more, Brawley said.

The remaining four patients—two with colon cancer, one with ovarian cancer and one with prostate cancer—saw their disease stabilize.

The researchers plan on combining the current [vaccine](#) with a drug that can help overcome a cancer's ability to suppress the immune system in the next phase of research. The drugs are called checkpoint inhibitors.

Brawley explained that everyone has [white blood cells](#) circulating in their blood, looking for cancer. These immune system cells find cancer cells and kill them. But cancer cells learn to outsmart these killer cells. They essentially put up a white flag to signal that they're friendly when those white blood cells check on them. But checkpoint inhibitor drugs cover up that white flag, allowing the killer white blood [cells](#) to see the [cancer cells](#).

Berzofsky said, "We think [this combination] could be more effective than the use of individual agents, as we believe vaccines can trigger the immune function and adding checkpoint inhibitors can overcome the inhibitory effect of the cancer."

The findings were presented Sunday at a meeting sponsored by the Cancer Research Institute, the Association of Cancer Immunotherapy, the European Academy of Tumor Immunology and the American Association for Cancer Research, in New York City. Research presented at meetings should be considered preliminary until published in a peer-reviewed journal.

More information: Jay Berzofsky, M.D., Ph.D., chief, vaccine branch, Center for Cancer Research, National Cancer Institute, Bethesda, Md.; Otis Brawley, M.D., chief medical officer, American Cancer Society; Sept. 30, 2018 presentation, CRI-CIMT-EATI-AACR International Cancer Immunotherapy Conference, New York City

Learn more about cancer vaccines from the [American Cancer Society](#).

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