

Peptide vaccine stimulates immune response in patients with breast cancer

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Patients with breast cancer assigned to the HER2-based peptide vaccine AE37 had immunologic responses compared with a control group, according to 24-month results presented at the AACR Annual Meeting 2012, held here March 31 – April 4.

“The theory is that once you form that response to the specific peptide, if the body has a recurrence, it will recognize that cancer as a bad thing, a foreign thing,” said Diane F. Hale, M.D., a research resident in general surgery at Brooke Army Medical Center in Fort Sam, Houston, Texas. “The immune markers could lead us to potentially identify those people who may have a recurrence.”

Of the 217 women enrolled in this prospective, randomized, single-blinded phase II trial, all had completed the standard therapy for [breast cancer](#) and were disease-free at the start of the trial.

“We wanted the high-risk [patients](#), those who are at the highest risk for recurrence, so we included those patients who were node-positive or who were node-negative but had poor prognostic factors, such as ER/PR negativity,” Hale said.

Researchers assigned 109 patients to AE37 and the immunoadjuvant granulocyte-macrophage colony-stimulating factor (GM-CSF) and assigned 108 patients to GM-CSF alone in six monthly intradermal injections.

They evaluated in vivo delayed-type hypersensitivity reactions by injecting a small, nontherapeutic dose of the vaccine beneath the patient's skin and looking for a physical reaction of greater than 5 mm. In the vaccine group, 86 percent of patients showed a significant response compared with 27 percent of patients in the control group.

In addition, researchers evaluated in vitro proliferation responses and found that the vaccine group had more responders than the control group. The latter group had more nonresponders, based on stimulation indexes.

“Naturally, the people in the vaccine group had a significant response compared with the control group because they didn't have that immune stimulation to the HER2 peptide,” Hale said.

Researchers also measured T regulatory cell responses in 107 patients. Within the vaccine group, “there was a larger percentage of patients who had a decrease in their T regulatory cells” from prevaccination baseline, Hale said. Forty-one patients assigned to the peptide vaccine vs. 28 patient controls had a decrease of more than 90 percent.

Monitoring immunologic tests and T regulatory cells throughout the vaccination process may classify patients as responders and nonresponders. “That can also help us in the future to identify who may recur,” Hale said.

Provided by American Association for Cancer Research

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