Early trial of new drug shows promise for patients with triple-negative breast cancer

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Study author Dr. Rita Nanda meets with a triple-negative breast cancer patient in clinic at the University of Chicago Medicine. Credit: The University of Chicago Medicine

In patients with metastatic triple-negative breast cancer—a disease with no approved targeted therapies—infusion of pembrolizumab produced durable responses in almost one out of five patients enrolled in a phase-Ib clinical trial, according to data presented Dec. 10, at the 2014 San Antonio Breast Cancer Symposium.

The multi-center, non-randomized trial was designed to evaluate the safety, tolerability and antitumor activity of bi-weekly infusions of pembrolizumab (MK-3475, marketed as Keytruda®). The researchers enrolled 27 patients, aged 29 to 72 years, who had metastatic triple-negative breast cancer that either relapsed after treatment for early stage disease or progressed on therapy for advanced disease.

"For this group of patients our treatment options are limited to chemotherapy," said study director Rita Nanda, MD, assistant professor of medicine and associate director of the breast medical oncology program at the University of Chicago.

All patients in the study had triple-negative tumors with high levels of a protein called programmed death-ligand 1 (PD-L1). This protein can suppress the immune system's efforts to eliminate cancer cells. Pembrolizumab is a monoclonal antibody designed to help reactivate a person's own immune system to help fight the tumor.

"Pembrolizumab appears to make a significant difference for a subset of patients," Nanda said. "Of the 27 patients in this study with measurable disease, five (18.5%) had encouraging results. One patient had a complete response, and four had a partial response to treatment."

Responses for those five patients were long-lasting. Meanwhile, the patient with a complete response and two of those with a partial response continue to be treated with pembrolizumab.

An additional seven patients had stable disease, and twelve had progressive disease. Three patients left the trial early because their disease progressed.

Pembrolizumab, approved in September 2014 by the Food and Drug Administration for treatment of melanoma, does have some side effects. But Nanda said those are generally mild and easy to manage. They include fatigue, cough, nausea, itchy skin, rash, decreased appetite, constipation, joint pain and diarrhea.

In this trial, four of the 27 patients experienced at least one severe or life-threatening drug-related adverse event. One patient died while on the study treatment.

"The median survival for patients with triple-negative breast cancer is approximately one year," Nanda said. "We need better treatments for this disease. The promising activity of pembrolizumab seen in PD-L1-expressing, triple-negative breast

cancer is exciting, and certainly worthy of further investigation."

An important next step, she said, is to learn how to predict which patients are most likely to benefit and how to manage the drug's toxicity.

An earlier study of pembrolizumab, presented in June at the annual meeting of the American Society of Clinical Oncology by Tanguy Seiwert, MD, assistant professor of medicine at the University of Chicago, found a similar response rate in PD-L1 positive patients with advanced head and neck cancer.

Provided by University of Chicago Medical Center