Pembrolizumab is Effective Antibody for PD-L1–Positive Lung Cancer

Pembrolizumab is more efficacious than chemotherapy in a phase 3 randomized trial of patients with PD-L1–positive non–small-cell lung cancer

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July 21, 2017 – For patients with PD-L1–positive non–small-cell lung cancer (NSCLC), the monoclonal antibody pembrolizumab improved progression-free survival more than chemotherapy, an open-label trial showed.

Martin Reck, MD, PhD, from the Lung Clinic Grosshansdorf, Airway Research Center North, German Center of Lung Research in Grosshansdorf, Germany, and colleagues reported their findings in the November 10, 2016 issue of *The New England Journal of Medicine*.

"Approximately 23 to 28% of patients with advanced NSCLC have a high level of programmed death ligand 1 (PD-L1) expression," the researchers noted. Pembrolizumab, a PD-L1 antibody, was previously shown to treat NSCLC characterized by PD-L1 expression on 50% or more of tumor cells.

This open-label trial examined the efficacy and safety profile of pembrolizumab compared with chemotherapy in patients with PD-L1–positive NSCLC.

Trial participants (N = 305) were randomly assigned in a 1:1 ratio to receive either pembrolizumab (200 mg every 3 weeks for 35 cycles) or one of five platinum-based chemotherapy treatments for 4 to 6 cycles.

Progression-free survival was significantly longer with pembrolizumab treatment compared with chemotherapy (10.3 vs. 6.0 months, $P < 0.001$). Approximately 62.1% vs. 50.3% of patients treated with pembrolizumab vs. chemotherapy, respectively, were living without disease progression after 6 months of treatment.

In addition, overall survival at 6 months was significantly longer with pembrolizumab treatment than with chemotherapy (80.2% vs. 72.4%, $P = 0.005$). Furthermore, the objective response rate according to Response Evaluation Criteria in Solid Tumors (RECIST) was 44.8% and 27.8% for pembrolizumab vs. chemotherapy, respectively.

Total adverse events occurred more often with chemotherapy than with pembrolizumab (90.0% vs. 73.4% of patients). Nausea (43.3% vs. 9.7%), anemia (44.0% vs. 5.2%), and fatigue (28.7% vs. 10.4%) specifically occurred more often with chemotherapy than with pembrolizumab. Conversely, pembrolizumab was associated with more immune-mediated side effects than chemotherapy (29.2% vs. 4.7%). Serious adverse events occurred in a similar number of patients for both treatments (21.4% vs. 20.7% for pembrolizumab vs. chemotherapy, respectively).

The authors noted that the longer progression-free survival with pembrolizumab was independent of patient age, sex, and many disease characteristics, adding support for this non-chemotherapeutic NSCLC treatment. "The benefit of pembrolizumab observed in patients who had squamous tumors is notable, given the limited treatment options available for these patients," wrote Dr. Reck.

This study was funded by Merck.

N Engl J Med. Published November 10, 2016