PHYSICIANS

Immunotherapy for NSCLC

MYTHS BUSTED

Immunotherapy is indicated only for metastatic (stage IV) non–small cell lung cancer.

Immunotherapy with anti-PD-1 or anti-PD-L1 inhibitors was initially proven to be effective and was approved by the FDA for late-stage (stage IV) non–small cell lung cancer (NSCLC), but it has also shown some positive results for stage III NSCLC. Maintenance durvalumab (a PD-L1 inhibitor) after concurrent chemotherapy and radiation is currently FDA approved for stage III unresectable NSCLC. In the phase 3 PACIFIC trial, patients with unresectable stage III NSCLC who received maintenance durvalumab after 6 weeks of concurrent chemotherapy and radiation with no evidence of progression had overall survival (OS) of 83.1% at 1 year, 74.6% at 2 years, and 66.3% at 3 years vs 55.3%, 57%, and 43.5% with placebo.

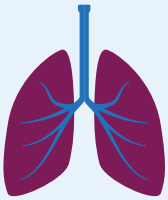
Immunotherapy is FDA-approved only for second-line treatment of NSCLC.

Immune checkpoint inhibitors and several anti-PD-1 (nivolumab and pembrolizumab) and anti-PD-L1 (atezolizumab) inhibitors have been approved for use as a second-line therapy for inpatients with NSCLC. Subsequent phase 3 studies of immunotherapy with pembrolizumab and atezolizumab given as a first-line treatment showed significant improvement in OS when used alone or in combination with chemotherapy. Recently, a large, randomized, phase 3 trial also demonstrated improvement in OS with a combination of two immune checkpoint inhibitors (nivolumab and ipilimumab) given as a first-line treatment to patients with stage IV NSCLC.

For NSCLC, immunotherapy should always be given with chemotherapy.

Immune checkpoint inhibitors tend to work better for patients with high levels of PD-L1 expression in the NSCLC cells. The pivotal phase 3 KEYNOTE-024 trial showed the superiority of pembrolizumab over platinum-based chemotherapy, independent of histology, when given to patients with PD-L1 levels of more than 50%. Recent phase 3 clinical trials have also shown a benefit of single-agent immunotherapy over platinum-based chemotherapy for patients with low levels—even less than 1%—of PD-L1 expression.

No therapies for NSCLC improve overall survival.



The use of immunotherapy as a first-line treatment for NSCLC has resulted in a significant gain in OS for our patients. The KEYNOTE-001 study found that the use of pembrolizumab quadrupled the 5-year survival rates from the preimmunotherapy era (23.2% vs 5.5%). At 7 years, there are still patients alive and well after receiving immunotherapy.

To learn more go to foundation.chestnet.org/lung-cancer

Supported in part through an unrestricted educational grant from Bristol-Myers Squibb.

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MYTHS

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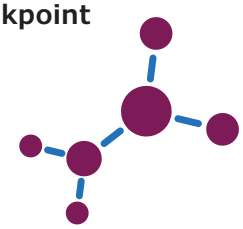
A combination of two immune checkpoint inhibitors is not indicated for NSCLC.



The CHECKMATE-227 trial tested the combination of two immune checkpoint inhibitors (nivolumab and ipilimumab) as a first-line treatment for patients with NSCLC (N = 793). OS was significantly improved for those treated with nivolumab plus ipilimumab vs platinum-doublet chemotherapy. This improvement was seen across all levels of PD-L1 expression. The median response duration for the immunotherapy arm was 232 months vs 6.2 months for chemotherapy. The immunotherapy regimen was well tolerated.

Immunotherapy for NSCLC is usually very poorly tolerated.

Treatment of NSCLC with immunotherapy tends to be well tolerated. Immunotherapy works by activating $CD8^+$ T cells; these cells are involved in antitumor cytotoxic effects. However, immune checkpoint inhibitors can have off-target effects that mimic autoimmune diseases and can potentially target any organ in the body. Immune-related side effects are different from the side effects of cytotoxic chemotherapy. Up to 27% of patients treated with immune checkpoint inhibitors have severe or life-threatening side effects and require intervention with steroids or other immunosuppressive agents.

Multidisciplinary lung cancer tumor boards are only for enrollment in lung cancer clinical trials.

Multidisciplinary lung cancer tumor boards include clinical and research experts in medical oncology, radiation oncology, thoracic surgery, pulmonary medicine, radiology, pathology, and palliative care. The purpose of tumor boards is to provide the best options available for patients with lung cancer. Those options might include, but are not limited to, clinical trials.

Multidisciplinary lung cancer tumor boards are only for academic medical centers.

A multidisciplinary lung cancer tumor board is a clinical resource that improves the care of patients with cancer in both academic and community clinical settings. These interactions can occur in person or virtually.

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