Leveraging the Immune System for Therapeutic Benefit in Non-Small Cell Lung Cancer: Scientific Insights, Clinical Applications and Future Directions

CME Information

TARGET AUDIENCE

This activity is intended for medical oncologists, hematologists, surgeons, radiation oncologists and other healthcare professionals involved in basic, translational and clinical cancer research or treatment.

OVERVIEW OF ACTIVITY

The past several years have seen an explosion in the emergence of new therapies that leverage the natural ability of the human body to attack and treat cancer. Known as cancer immunotherapies, these treatments are generating excitement all over the world as they have reshaped the management of lung cancer in previously unimagined ways. That being said, a number of controversies and questions remain with regard to the current application of these agents in clinical practice.

This CME program developed from the proceedings of a CME symposium held during the 2019 AACR Annual Meeting features video slide presentations given by leading lung cancer researchers on the therapeutic benefits associated with leveraging the immune system in patients with lung cancer. By providing information on important developments, this CME activity will assist medical oncologists and other healthcare professionals to address existing management uncertainties and determine the current clinical applications and future roles of immune checkpoint inhibitors in lung cancer.

LEARNING OBJECTIVES

- Analyze the biologic basis for the investigation of immune checkpoint inhibitors in the treatment of nonmetastatic and advanced non-small cell lung cancer (NSCLC).
- Appraise the recent FDA approval of the anti-PD-L1 antibody durvalumab as consolidation therapy for patients with unresectable Stage III NSCLC who have not experienced disease progression after concurrent platinum-based chemotherapy and radiation therapy, and discern how this strategy can be appropriately and safely integrated into routine clinical practice.
- Review published research data documenting the safety and efficacy of anti-PD-1/PD-L1 antibodies as monotherapy or in combination with chemotherapy for newly diagnosed metastatic NSCLC.
- Evaluate the biology of oncogene-addicted tumors to optimally employ anti-PD-1/PD-L1 antibody therapy in the care of patients with metastatic NSCLC and a targetable mutation.
- Recognize current investigational efforts to identify additional biomarkers of response to immune checkpoint inhibition in patients with NSCLC, and consider how they may be applied in future clinical practice.
- Understand the biologic rationale for and published research data with the use of combination regimens targeting multiple immune checkpoints, and, where applicable, refer patients for ongoing research studies.
- Recall the design of ongoing clinical trials evaluating anti-PD-1/PD-L1 antibodies in combination with other systemic therapies for NSCLC, and counsel appropriate patients about availability and participation.

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Successful completion of this CME activity, which includes participation in the evaluation component, enables the participant to earn up to 1.25 Medical Knowledge MOC points in the American Board of Internal Medicine's (ABIM) Maintenance of Certification (MOC) program. Participants will earn MOC points equivalent to the amount of CME credits claimed for the activity. It is the CME activity provider's responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.

Please note, this program has been specifically designed for the following ABIM specialty: **medical oncology**.

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FACULTY — The following faculty (and their spouses/partners) reported relevant conflicts of interest, which have been resolved through a conflict of interest resolution process:

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MODERATOR — **Dr Love** is president and CEO of Research To Practice. Research To Practice receives funds in the form of educational grants to develop CME activities from the following commercial interests: AbbVie Inc, Acerta Pharma

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This activity is supported by an educational grant from AstraZeneca Pharmaceuticals LP.

Hardware/Software Requirements:
A high-speed Internet connection
A monitor set to 1280 x 1024 pixels or more
Internet Explorer 11 or later, Firefox 56 or later, Chrome 61 or later, Safari 11 or later, Opera 48 or later
Adobe Flash Player 27 plug-in or later
Adobe Acrobat Reader
(Optional) Sound card and speakers for audio

Last review date: June 2019

Expiration date: June 2020

Select Publications

Corey J Langer, MD

Antonia SJ et al. **Overall survival with durvalumab after chemoradiotherapy in stage III NSCLC.** *N Engl J Med* 2018;379(24):2342-50.

Antonia SJ et al. **Durvalumab after chemoradiotherapy in stage III non-small-cell lung cancer.** *N Engl J Med* 2017;377(20):1919-29.

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Deng L et al. **Irradiation and anti-PD-L1 treatment synergistically promote antitumor immunity in mice.** *J Clin Invest* 2014;124(2):687-95.

Durm G et al. **Updated results of a phase II trial of concurrent chemoradiation with consolidation pembrolizumab in patients with unresectable stage III NSCLC.** *J Thorac Oncol* 2018;13(10):S321.

Lin S et al. **DETERRED: Phase II trial combining atezolizumab concurrently with chemoradiation therapy in locally advanced non-small cell lung cancer.** *J Thorac Oncol* 2018;13(10):S320-1.

Twyman-Saint Victor C et al. **Radiation and dual checkpoint blockade activate non-redundant immune mechanisms in cancer.** *Nature* 2015;520(7547):373-7.

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Vali A Papadimitrakopoulou, MD

Antonia SJ et al. **Overall survival with durvalumab after chemoradiotherapy in stage III NSCLC.** *N Engl J Med* 2018;379(24):2342-50.

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Boutros C et al. **Safety profiles of anti-CTLA-4 and anti-PD-1 antibodies alone and in combination.** *Nat Rev Oncol* 2016;13(8):473-86.

Brahmer JR et al. **Management of immune-related adverse events in patients treated with immune checkpoint inhibitor therapy: American Society of Clinical Oncology clinical practice guideline.** *J Clin Oncol* 2018;36(17):1714-68.

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De Bruyn P et al. **Immune checkpoint blockade for organ transplant patients with advanced cancer: How far can we go?** *Curr Opin Oncol* 2019;31(2):54-64.

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Leonardi GC et al. **Safety of programmed death-1 pathway inhibitors among patients with non-small-cell lung cancer and preexisting autoimmune disorders.** *J Clin Oncol* 2018;36(19):1905-12.

Naidoo J et al. **Inflammatory arthritis: A newly recognized adverse event of immune checkpoint blockade.** *Oncologist* 2017;22(6):627-30.

Naidoo J et al. **Pneumonitis in patients treated with anti-programmed death-1/programmed death ligand 1 therapy.** *J Clin Oncol* 2017;35(7):709-17.

Ryder M et al. **Endocrine-related adverse events following ipilimumab in patients with advanced melanoma: A comprehensive retrospective review from a single institution.** *Endocr Relat Cancer* 2014;21(2):371-81.

Weber JS et al. **Management of immune-related adverse events and kinetics of response with ipilimumab.** *J Clin Oncol* 2012;30(21):2691-7.

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Gandhi L et al. **Pembrolizumab plus chemotherapy in metastatic non-small-cell lung cancer.** *N Engl J Med* 2018;378(22):2078-92.

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Jotte RM et al. **IMpower131: Primary PFS and safety analysis of a randomized phase III study of atezolizumab + carboplatin + paclitaxel or *nab*-paclitaxel vs carboplatin + *nab*-paclitaxel as 1L therapy in advanced squamous NSCLC.** *Proc ASCO* 2018;**Abstract LBA9000**.

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Naiyer Rizvi, MD

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Diab A et al. **NKTR-214 (CD122-biased agonist) plus nivolumab in patients with advanced solid tumors: Preliminary phase 1/2 results of PIVOT.** *Proc ASCO* 2018;**Abstract 3006**.

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Whiteside TL et al. **Emerging opportunities and challenges in cancer immunotherapy.** *Clin Cancer Res* 2016;22(8):1845-55.