

# Lung Cancer™

U P D A T E

Conversations with Oncology Investigators  
Bridging the Gap between Research and Patient Care

**FACULTY INTERVIEWS**

Bruce E Johnson, MD

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**EDITOR**

Neil Love, MD



### OVERVIEW OF ACTIVITY

Traditional chemotherapy, surgery and radiation therapy have had a modest effect on long-term outcomes for patients with lung cancer. However, the advent of biologic and immunotherapeutic agents has led to recent improvements in disease-free and overall survival in select populations. In order to offer optimal patient care — including the option of clinical trial participation — clinicians must be well informed of these advances. Featuring information on the latest research developments, this program is designed to assist medical and radiation oncologists with the formulation of up-to-date strategies for the care of patients with lung cancer.

### LEARNING OBJECTIVES

- Discuss the benefits and risks associated with systemic therapies used in the evidence-based treatment of lung cancer, including tyrosine kinase inhibitors (TKIs), chemotherapy and targeted biologic agents.
- Assess available research evidence with existing and emerging therapeutic options for advanced squamous cell carcinoma of the lung, and use this information to guide clinical care and protocol opportunities.
- Formulate a plan to incorporate checkpoint inhibitor therapy into the treatment of advanced non-small cell lung cancer (NSCLC), and subsequently monitor immune-related side effects when they occur.
- Recognize the recent FDA approvals of ramucirumab and necitumumab for patients with progressive metastatic NSCLC, and discern how these agents can be safely administered to appropriate patients with squamous and nonsquamous disease.
- Describe emerging data on tumor immunotherapy for patients with small cell lung cancer, and consider this information when counseling patients regarding clinical trial participation.

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## SELECT PUBLICATIONS

**A randomized phase II trial of erlotinib alone or in combination with bevacizumab in patients with non-small cell lung cancer and activating epidermal growth factor receptor mutations. NCT01532089**

Awad M et al. **MET exon 14 mutations in non-small-cell lung cancer are associated with advanced age and stage-dependent MET genomic amplification and c-Met overexpression.** *J Clin Oncol* 2016;34(7):721-30.

Karlovich C et al. **Assessment of EGFR mutation status in matched plasma and tumor tissue of NSCLC patients from a phase I study of rociletinib (CO-1686).** *Clin Cancer Res* 2016;[Epub ahead of print].

Ou SH et al. **Alectinib in crizotinib-refractory ALK-rearranged non-small-cell lung cancer: A phase II global study.** *J Clin Oncol* 2016;34(7):661-8.

Pietanza MC et al. **Safety, activity, and response durability assessment of single agent rovalpituzumab tesirine, a delta-like protein 3 (DLL3)-targeted antibody drug conjugate (ADC), in small cell lung cancer (SCLC).** *Proc ECCO* 2015;Abstract 7LBA.

Sacher A et al. **Prospective validation of rapid plasma genotyping for the detection of EGFR and KRAS mutations in advanced lung cancer.** *JAMA Oncol* 2016;[Epub ahead of print].

Sequist L et al. **Rociletinib in EGFR-mutated non-small-cell lung cancer.** *N Engl J Med* 2015;373(18):1700-9.

Sequist LV et al. **Osimertinib responses after disease progression in patients who had been receiving rociletinib.** *JAMA Oncol* 2015;[Epub ahead of print].

Seto T et al. **Erlotinib alone or with bevacizumab as first-line therapy in patients with advanced non-squamous non-small-cell lung cancer harbouring EGFR mutations (JO25567): An open-label, randomised, multicentre, phase 2 study.** *Lancet Oncol* 2014;15(11):1236-44.

Socinski MA et al. **Weekly nab-paclitaxel in combination with carboplatin versus solvent-based paclitaxel plus carboplatin as first-line therapy in patients with advanced non-small-cell lung cancer: Final results of a phase III trial.** *J Clin Oncol* 2012;30(17):2055-62.

Yang JC et al. **Afatinib versus cisplatin-based chemotherapy for EGFR mutation-positive lung adenocarcinoma (LUX-Lung 3 and LUX-Lung 6): Analysis of overall survival data from two randomised, phase 3 trials.** *Lancet Oncol* 2015;16(2):141-51.

Zalcman G et al. **Bevacizumab for newly diagnosed pleural mesothelioma in the Mesothelioma Avastin Cisplatin Pemetrexed Study (MAPS): A randomised, controlled, open-label, phase 3 trial.** *Lancet* 2016;[Epub ahead of print].

## QUESTIONS (PLEASE CIRCLE ANSWER):

1. A randomized Phase II trial evaluating erlotinib alone or with bevacizumab as first-line therapy for patients with advanced EGFR mutation-positive NSCLC demonstrated \_\_\_\_\_ with the addition of bevacizumab.
  - a. A significant improvement in progression-free survival
  - b. More pronounced benefit for patients with exon 19 deletions than for those with L858R mutations
  - c. Both a and b
2. A combined analysis of the LUX-Lung 3 and LUX-Lung 6 trials for patients with advanced EGFR mutation-positive lung adenocarcinoma demonstrated an overall survival advantage with afatinib for patients with \_\_\_\_\_.
  - a. Exon 19 deletion mutations
  - b. L858R mutations
  - c. Both a and b
3. Patients with nonsquamous lung cancer should be routinely tested for which of the following tumor genetic alterations regardless of smoking history?
  - a. EGFR
  - b. ROS1
  - c. ALK
  - d. All of the above
4. The novel agent rovalpituzumab tesirine, which has shown promising preliminary results in relapsed/refractory small cell lung cancer, is a(n) \_\_\_\_\_.
  - a. Checkpoint inhibitor
  - b. Antibody-drug conjugate
  - c. ALK inhibitor
5. The Phase III MAPS study evaluating cisplatin and pemetrexed with or without bevacizumab for patients with newly diagnosed pleural mesothelioma reported statistically significant improvement(s) in \_\_\_\_\_ with the addition of bevacizumab.
  - a. Median progression-free survival
  - b. Median overall survival
  - c. Both a and b
  - d. Neither a nor b
6. The anti-EGFR antibody necitumumab was recently approved by the FDA for use in combination with chemotherapy as first-line therapy for advanced \_\_\_\_\_.
  - a. Squamous cell carcinoma
  - b. Nonsquamous cell carcinoma
  - c. Both a and b
7. A planned randomized Phase II trial by the Alliance Foundation will compare toptecan to \_\_\_\_\_ for patients with relapsed/refractory small cell lung cancer.
  - a. Nivolumab
  - b. Pembrolizumab
  - c. Ipilimumab
8. In the treatment of NSCLC, osimertinib is \_\_\_\_\_.
  - a. A recently FDA-approved third-generation EGFR TKI
  - b. Effective against tumors with the T790M mutation
  - c. Commonly associated with hyperglycemia
  - d. All of the above
  - e. Both a and b
9. A Phase III trial of second-line docetaxel with or without ramucirumab for patients with Stage IV NSCLC after disease progression on a platinum-based regimen demonstrated a statistically significant improvement in \_\_\_\_\_ with the addition of ramucirumab to docetaxel.
  - a. Median progression-free survival
  - b. Median overall survival
  - c. Overall response rate
  - d. Both a and c
  - e. All of the above
10. Mutations in the MET exon 14 gene \_\_\_\_\_.
  - a. Occur in 3% of patients with nonsquamous NSCLC
  - b. Are not sensitive to crizotinib
  - c. May occur with concurrent MET amplification
  - d. All of the above
  - e. Both a and c

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**PART 1 — Please tell us about your experience with this educational activity**

**How would you characterize your level of knowledge on the following topics?**

4 = Excellent    3 = Good    2 = Adequate    1 = Suboptimal

|  | <b>BEFORE</b> | <b>AFTER</b> |
|--|---------------|--------------|
| Efficacy and tolerability of the recently FDA-approved EGFR TKI osimertinib  | 4 3 2 1       | 4 3 2 1      |
| Activity of the novel antibody-drug conjugate rovalpituzumab tesirine for relapsed/refractory small cell lung cancer       | 4 3 2 1       | 4 3 2 1      |
| Benefits and risks of the anti-EGFR antibody necitumumab for metastatic squamous cell lung cancer                          | 4 3 2 1       | 4 3 2 1      |
| Efficacy of ramucirumab with docetaxel for patients with previously treated NSCLC  | 4 3 2 1       | 4 3 2 1      |
| Incorporating immune checkpoint inhibitors into the treatment algorithm for patients with NSCLC                            | 4 3 2 1       | 4 3 2 1      |
| Results of the Phase III MAPS trial of cisplatin/pemetrexed with or without bevacizumab for malignant pleural mesothelioma | 4 3 2 1       | 4 3 2 1      |

**Practice Setting:**

- Academic center/medical school     Community cancer center/hospital     Group practice  
 Solo practice     Government (eg, VA)     Other (please specify).....

**Approximately how many new patients with lung cancer do you see per year?** ..... patients

**Was the activity evidence based, fair, balanced and free from commercial bias?**

- Yes     No    If no, please explain: .....

**Please identify how you will change your practice as a result of completing this activity (select all that apply).**

- This activity validated my current practice  
 Create/revise protocols, policies and/or procedures  
 Change the management and/or treatment of my patients  
 Other (please explain): .....

**If you intend to implement any changes in your practice, please provide 1 or more examples:**

.....  
 .....

**The content of this activity matched my current (or potential) scope of practice.**

- Yes     No    If no, please explain: .....

**Please respond to the following learning objectives (LOs) by circling the appropriate selection:**

4 = Yes    3 = Will consider    2 = No    1 = Already doing    N/M = LO not met    N/A = Not applicable

**As a result of this activity, I will be able to:**

- Discuss the benefits and risks associated with systemic therapies used in the evidence-based treatment of lung cancer, including tyrosine kinase inhibitors (TKIs), chemotherapy and targeted biologic agents. ....4 3 2 1 N/M N/A
- Assess available research evidence with existing and emerging therapeutic options for advanced squamous cell carcinoma of the lung, and use this information to guide clinical care and protocol opportunities. ....4 3 2 1 N/M N/A

**EDUCATIONAL ASSESSMENT AND CREDIT FORM (continued)**

**As a result of this activity, I will be able to:**

- Formulate a plan to incorporate checkpoint inhibitor therapy into the treatment of advanced non-small cell lung cancer (NSCLC), and subsequently monitor immune-related side effects when they occur. . . . .4 3 2 1 N/M N/A
- Recognize the recent FDA approvals of ramucirumab and necitumumab for patients with progressive metastatic NSCLC, and discern how these agents can be safely administered to appropriate patients with squamous and nonsquamous disease. . . . .4 3 2 1 N/M N/A
- Describe emerging data on tumor immunotherapy for patients with small cell lung cancer, and consider this information when counseling patients regarding clinical trial participation. . . . .4 3 2 1 N/M N/A

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| Faculty                  | Knowledge of subject matter |   |   |   | Effectiveness as an educator |   |   |   |
|--------------------------|-----------------------------|---|---|---|------------------------------|---|---|---|
| Bruce E Johnson, MD      | 4                           | 3 | 2 | 1 | 4                            | 3 | 2 | 1 |
| Thomas E Stinchcombe, MD | 4                           | 3 | 2 | 1 | 4                            | 3 | 2 | 1 |
| Editor                   | Knowledge of subject matter |   |   |   | Effectiveness as an educator |   |   |   |
| Neil Love, MD            | 4                           | 3 | 2 | 1 | 4                            | 3 | 2 | 1 |

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