

# Non-Small Cell Lung Cancer: Clinical and Economic Considerations in Targeting Therapy Based on Molecular Profiling

## Physician Credit

*Instructions for Receiving Continuing Physician Education (CME)*

### *Credit: Testing and Grading Information*

This activity is free online at [www.ajmc.com/ce](http://www.ajmc.com/ce) and [www.gotoper.com](http://www.gotoper.com) where you will be directed to the activity in its entirety including the online pre-test and posttest, evaluation, and request for credit. Instant online grading along with a downloadable CME certificate are also available.

### *Testing and Grading Directions*

Each participant evaluating the activity and achieving a passing grade of 70% or higher on the posttest will receive a CME certificate.

## Pharmacy Credit

*Instructions for Receiving Continuing Pharmacy Education Credit:*

### *Testing and Grading Information*

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## Instructions for Obtaining Credit

Participants must read each article in this supplement, complete the online posttest achieving a passing score of 70% or higher, and complete an online evaluation and request for credit. Detailed instructions on obtaining CE credit are included following the sample online posttest.

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## Sample of Online CME/CE Posttest

Choose the best answer for each of the following:

1. Among patients with lung cancer, approximately what percentage has non-small cell lung cancer (NSCLC)?
  - a. 45%-55%
  - b. 55%-65%
  - c. 65%-75%
  - d. 75%-85%
2. Since 2001, the estimated incidence of NSCLC in the United States has increased from 169,500 to approximately:
  - a. 208,000
  - b. 218,000
  - c. 228,000
  - d. 238,000
3. Since 2001, the mortality of NSCLC has remained comparatively stable at roughly:
  - a. 149,000
  - b. 159,000
  - c. 169,000
  - d. 179,000

4. Which of the following is NOT a major risk factor for developing lung cancer?
  - a. Cigarette smoking
  - b. Exposure to pollution
  - c. Passive inhalation of cigarette smoke
  - d. Radon and asbestos exposure
  
5. Which of the following is the most common form of NSCLC?
  - a. Adenocarcinoma
  - b. Large cell carcinoma
  - c. Small cell carcinoma
  - d. Squamous cell carcinoma
  
6. Roughly what percentage of patients with newly diagnosed NSCLC will have metastatic disease?
  - a. 40%
  - b. 50%
  - c. 60%
  - d. 70%
  
7. The epidermal growth factor receptor (EGFR) is encoded by a gene known by which 2 other names?
  - a. ErbB1/HER1
  - b. ErbB2/HER2
  - c. ErbB3/HER3
  - d. ErbB4/HER4
  
8. Which of the following patient characteristics is least likely to be associated with an EGFR mutation?
  - a. Adenocarcinoma
  - b. Asian ethnicity
  - c. Heavy smoker
  - d. Female gender
  
9. Approximately what percentage of Caucasians harbor EGFR mutations?
  - a. 0%-20%
  - b. 20%-40%
  - c. 40%-60%
  - d. 60%-80%
  
10. Based on the results of the Iressa Pan-Asia Study, alterations of which of the following may increase susceptibility to EGFR tyrosine kinase inhibitors (TKIs)?
  - a. EGFR
  - b. EML4-ALK
  - c. KRAS
  - d. MET
  
11. When used as first-line therapy in patients harboring EGFR-activating mutations, which of the following demonstrated the longest progression-free survival (PFS)?
  - a. Carboplatin-paclitaxel
  - b. Cisplatin-docetaxel
  - c. Erlotinib
  - d. Pemetrexed
  
12. The Iressa Pan-Asia Study compared the TKI gefitinib with which chemotherapy regimen?
  - a. Bevacizumab-carboplatin
  - b. Carboplatin-docetaxel
  - c. Carboplatin-gemcitabine
  - d. Carboplatin-paclitaxel
  
13. The median PFS of patients with EGFR-activating mutations who have received EGFR-TKIs is approximately:
  - a. 0-4 months
  - b. 5-9 months
  - c. 10-14 months
  - d. 15-29 months
  
14. Which of the following tests is performed to determine the presence of EGFR mutation?
  - a. Fluorescence in situ hybridization
  - b. High performance liquid chromatography
  - c. Immunohistochemistry
  - d. Polymerase chain reaction
  
15. Evidence-based treatment strategies for NSCLC have reduced costs by as much as \_\_\_\_ compared with variable therapeutic practices, and produced \_\_\_\_\_ overall survival outcomes.
  - a. 25%, increased
  - b. 35%, similar
  - c. 45%, increased
  - d. 55%, similar

16. Testing for EGFR mutation may cost roughly \_\_\_\_\_ per procedure and require up to \_\_\_\_ week(s) for results.
- \$500, 1
  - \$1000, 2
  - \$1500, 3
  - \$2000, 4
17. Despite the explicit recommendations supporting its use by ASCO and NCCN, EGFR testing was ordered in only \_\_\_\_ of US acute care hospitals in 2010.
- 6%
  - 8%
  - 10%
  - 12%
18. According to the NCCN, \_\_\_\_\_ mutation is associated with EGFR-TKI resistance, and in patients with advanced or metastatic non-squamous disease, it is recommended that \_\_\_\_\_ is utilized first-line for ALK gene rearrangements.
- ALK, crizotinib
  - ALK, gefitinib
  - KRAS, crizotinib
  - KRAS, erlotinib
19. Which of the following statements regarding the use of erlotinib in patients with NSCLC is NOT reflective of the 2013 update to the NCCN clinical guidelines?
- Erlotinib is a treatment option for second-line maintenance therapy following chemotherapy for EGFR-mutation negative adenocarcinoma
  - Erlotinib is recommended as a first-line agent if the EGFR mutation is detected prior to chemotherapy
  - Erlotinib is recommended to be continued for patients who experience disease progression
  - Erlotinib may not be used as second- or third-line therapy in patients with poor performance status
20. A study published in 2012 found that EGFR-guided therapy with erlotinib in patients with stage IV or recurrent adenocarcinoma of the lung yielded an incremental cost-effectiveness ratio of approximately \_\_\_\_\_ per quality-adjusted life-year compared with first-line therapy with carboplatin-paclitaxel.
- \$50,000
  - \$80,000
  - \$110,000
  - \$140,000

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#### ***Testing and Grading Directions***

1. Each participant evaluating the activity and achieving a passing grade of 70% or higher on the online posttest will be eligible to receive a CME certificate.
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## **Pharmacy Credit**

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2. Participants receiving a failing grade on any exam will be notified and permitted to take 1 reexamination at no cost.
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