

HOSPITAL PHYSICIAN®

ONCOLOGY BOARD REVIEW MANUAL

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Signal Transduction Inhibitors and Lung Cancer Therapy

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Signal Transduction Inhibitors and Lung Cancer Therapy

Richard Mark White, MD, PhD

INTRODUCTION

Cancer of the lung remains the leading cause of cancer death both in the United States and worldwide.¹ Although there has been a decline in lung cancer incidence over the past several years, it will still cause more than 160,000 deaths in the United States this year, far exceeding the number of deaths attributable to breast and colon cancer.² Although cigarette smoking still remains the most significant risk factor for the development of lung cancer, certain subtypes show a striking incidence in nonsmokers, and recent evidence has shed light on the molecular events occurring in some of these tumors. This information has allowed for potential advances in effective use of molecularly targeted therapies.

CASE STUDY

INITIAL PRESENTATION AND HISTORY

A 62-year-old woman presents with fatigue and cough to her primary care physician. The symptoms have gradually worsened over the past 8 weeks and the cough is now keeping her awake at night. The cough is nonproductive, and she describes it as an “irritated” type of sensation. She has lost about 3 lb, although her appetite is intact. Her review of symptoms is otherwise negative for headaches, visual changes, neck pain or swelling, mouth sores, chest pain, resting shortness of breath, dyspnea on exertion, abdominal discomfort, nausea, vomiting, diarrhea, fevers, chills, or sweats.

- **What is the differential diagnosis for cough and fatigue in this patient?**

Cough is one of the most common reasons for a visit to a physician.³ A cough lasting longer than 3 weeks is commonly due to conditions such as gastroesophageal reflux disease, asthma, or postnasal drip. In smokers, conditions including chronic bronchitis, bronchiectasis, or malignancy must be considered as well. However,

lung cancer remains an uncommon cause of chronic cough, typically in approximately 2% of all patients.^{4,5} Other considerations, such as angiotensin-converting enzyme inhibitor-induced cough, should be considered in appropriate patients.

FURTHER HISTORY

The patient is not taking any medications. She smoked half a pack of cigarettes for 1 year at the age of 20 years and has never smoked since. She lives at home with her husband, who is also a nonsmoker. Her family is of European heritage and has no significant history of malignancy. She does not recall ever having had a chest radiograph in the past. She denies any unusual occupational exposures such as talc, silica, beryllium, or asbestos.

PHYSICAL EXAMINATION

The patient is a well-appearing, thin woman. Vital signs are normal. She is anicteric, with moist mucous membranes and no oropharyngeal lesions. Her neck examination a slight fullness of the L supraclavicular area. Her chest is clear with good air movement. Heart, abdomen, and extremity examinations are unremarkable. She has no other abnormal lymph nodes on examination.

INITIAL DIAGNOSTIC WORKUP

A routine complete blood count, chemistries, and liver function tests are within normal limits. A chest radiograph reveals a vague density in the left upper lobe (LUL) and borderline fullness in the hila bilaterally. She is initially treated with broad-spectrum antibiotics for 10 days with no change in her symptoms.

A computed tomography (CT) scan of the chest is ordered and demonstrates a 3.1-cm mass in the LUL along with mediastinal lymph nodes at the upper range of normal size. There are no abnormalities seen on abdominal and pelvic CT scan. The LUL mass is biopsied, and pathology demonstrates a poorly differentiated adenocarcinoma of the lung. Cytokeratin staining demonstrates that it is positive for CK7 and negative for CK20, consistent with a primary lung carcinoma rather than a secondary lesion.