SOUTHWESTERN NEWS

Media Contact: Morgan Lyons
214/648-3404
e-mail: Lyons01@swmed.edu

GENE MUTATIONS REVEAL LUNG CANCER

DALLAS — March 28, 1995 — Researchers at UT Southwestern Medical Center at Dallas reported that alterations in the genes of a section of chromosome 3p may reveal the earliest stages of lung cancer.

"Based on these findings, we may eventually be able to develop a test that would predict who will develop lung cancer," said Dr. Adi Gazdar, professor of pathology and holder of the W. Ray Wallace Distinguished Chair in Molecular Oncology at UT Southwestern. The study was published in a recent issue of *The Journal of the American Medical Association*.

Gazdar and his colleagues examined 24 human lung cancer specimens in the study. In the earliest stages of lung cancer, the UT Southwestern researchers determined that genetic alterations or deletions had developed in a region of chromosome 3p. The study also reinforced the link between smoking and the development of such cancer.

Lung cancer is the leading malignancy worldwide, with more than 900,000 cases diagnosed each year. "Within 15 years, that number will be 1.5 million," Gazdar said. "Nearly 90 percent of the people diagnosed with lung cancer will die from the disease."

The study also located gene alterations throughout the lung. "Our findings provide considerable support for the 'field cancerization' theory," Gazdar said. "That theory suggests the entire upper respiratory tract is compromised when exposed to carcinogens like those found in cigarette smoke. This raises the possibility that cancer may develop in multiple sections of the lung."

By finding defective genes, physicians may be able to detect lung cancer at a very

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early stage when treatment is most effective. It also is possible that if the defect is found, and the patient does not have lung cancer, the physician could be able to give the patient more precise information about his risk of developing this malignancy.

Gazdar's collaborators in the study included Dr. John Minna, director of the Harold C. Simmons Comprehensive Cancer Center at UT Southwestern. Minna also is director of the W. A. "Tex" and Deborah Moncrief Jr. Center for Cancer Genetics and holder of the Lisa K. Simmons Distinguished Chair in Comprehensive Oncology.

Other collaborators from UT Southwestern were Dr. Jaclyn Hung, Dr. Yosuke Kishimoto, Dr. Kenji Sugio, research fellows at the Simmons Center; Dr. Arvind Virmani, instructor in pathology; and Dr. Donald D. McIntire, a biostatistician.

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