



Contact: Renée McGaw
Director of Communications
International Association for the Study of Lung Cancer
renee.mcgaw@ucdenver.edu
+1-303-724-5796

Fibrous stroma associated with poor prognosis in lung squamous cell carcinoma

Sept. 1, 2011 -- The nature of the connective tissue surrounding lung cancer nests can help predict the aggressiveness of squamous cell carcinoma, according to research published in the September issue of the *Journal of Thoracic Oncology*, the official publication of the International Association for the Study of Lung Cancer (IASLC).

Non-small cell lung cancer (NSCLC) is the major cause of cancer-related deaths worldwide; its two major subtypes are adenocarcinoma and squamous cell carcinoma (SqCC). Although many reports have described the prognostic markers for adenocarcinoma, less research has been done into prognostic markers for SqCC.

In the study, researchers from Japan's National Cancer Center Hospital East and Keio University found that the prognosis for lung cancer patients with SqCC tumors surrounded by "fibrous stroma" was significantly worse than for patients whose SqCC cells were surrounded by "thin stroma."

Of the 220 patients whose tissue specimens were reviewed, 85 had fibrous stroma -- that is, stroma wider than some cancer nests and intermingled with plump fibroblast and/or collagen fibers -- and 135 had thin stroma, narrower than the cancer nest and composed of thin collagen-fiber lamellae or infiltrative lymphocytes. All had undergone a complete resection for a solitary lesion and were diagnosed as having a pathologic stage I disease. Patients who had received preoperative chemotherapy or preoperative thoracic radiation were excluded.

The 5-year recurrence-free survival rate was 70% for patients with thin stroma and 50% for patients with fibrous stroma. The 5-year overall survival rate was 72.3% for thin stroma cases and 55.5% for those with fibrous stroma.

SqCC tumors surrounded by fibrous stroma showed reduced expression of E-cadherin and increased expression of laminin-5 γ 2 and matrix metalloproteinase-7 (MMP7), proteins that have been found to increase cell motility and invasiveness.

"Elucidating whether the peritumoral stroma of lung SqCC contributes to cancer progression would be meaningful for the development of treatment targeting the tumor microenvironment and tailored to the histological subtype," researchers wrote.

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About the *Journal of Thoracic Oncology*:

The *Journal of Thoracic Oncology* (JTO) is the official monthly journal of the International Association for the Study of Lung Cancer (IASLC). It is a valuable resource for medical specialists and scientists who focus on the detection, prevention, diagnosis and treatment of lung cancer. It emphasizes a multidisciplinary approach, including original research (clinical trials and translational or basic research), reviews and opinion pieces.

To learn more about the JTO please visit <http://journals.lww.com/jto/pages/default.aspx>.

About the IASLC:

The Denver-based International Association for the Study of Lung Cancer (IASLC) is the only global organization dedicated to the study of lung cancer. Founded in 1972, the association's membership includes more than 3,500 lung cancer specialists in 80 countries.

IASLC members promote the study of etiology, epidemiology, prevention, diagnosis, treatment and all other aspects of lung cancer and thoracic malignancies. IASLC disseminates information about lung cancer to scientists, members of the medical community and the public, and uses all available means to eliminate lung cancer as a health threat for the individual patients and throughout the world. Membership is open to any physician, health professional or scientist interested in lung cancer.

To learn more about IASLC please visit <http://iaslc.org/>