



## News Release

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Session C72: Predictive and Prognostic Markers in Thoracic Oncology

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Location: Colorado Convention Center

### **Smoking a Significant Predictor of Lung Cancer Recurrence in Survivors**

ATS 2015, DENVER – In 2015, an estimated 158,040 Americans are expected to die from lung cancer, making it the leading cause of cancer death in in this country. Lung cancer screening with low-dose CT scans in high risk smokers has recently been approved to help detect lung cancer in its early stages when no symptoms are noticeable. The hope is that by detecting lung cancer in the early, more treatable stages, doctors may be able to improve the outcomes of patients with lung cancer. However, in addition to screening high risk smokers, close follow-up and monitoring of lung cancer survivors is also extremely important.

A new study has shown that many lung cancer survivors are at high risk for developing another lung cancer or having their cancer return after completing treatment. Conducted by researchers in the U.S., the study specifically looked at lung cancer survivors from three different institutions who had shown no further evidence of having the disease after completing the required treatment for lung cancer.

The study will be presented at the ATS 2015 International Conference.

“We looked closely at risk factors that may help in predicting cancer recurrence in lung cancer survivors,” said study lead author Samjot Dhillon, MD. “What we learned is that patients with a history of lung cancer should have close long-term surveillance so their doctor can detect early on if the cancer is recurring or if there is another cancer developing.”

The research looked at 192 lung cancer survivors who underwent surveillance with CT scans of their chest and autofluorescence bronchoscopy (AFB) for a mean duration of close to 8 and a half years. AFB allows doctors to see premalignant and early malignant lesions in the central airways while CT scans can reveal large lymph nodes in the chest or nodules inside the lungs which could be due to cancer. This means both CT and AFB may allow detection of lung cancer in early stages.

They also looked at information about major risk factors to see if there was a connection between them and cancer recurrence. Those factors included: smoking status, as well as how many packs they smoke per year; prior cancers; respiratory disease; asbestos exposure; and if there was a family history of lung cancer.

What they found was that 38% had developed recurrent or another lung cancer during this period. Further research analyzing the significant factors for predicting lung cancer recurrence indicated that those factors were: having recurrence of another non-lung cancer; presence of a nodule on a CT scan of chest, regardless of its size or location; finding premalignant lesions called “metaplasia” on three AFB exams anywhere in central airway; and how long the patients had been smoking. In fact, for every additional pack a patient smoked per year, it increased the risk of having lung cancer again by 1%.

This study demonstrates that lung cancer survivors need to be monitored closely by their doctors to detect if their lung cancer is recurring or if another is developing.

“Along with close medical surveillance for lung cancer recurrence, it is also important for patients to stop smoking as soon as possible since this is a known risk,” said Dhillon. “Every additional pack per year of smoking is associated with further increased risk of cancer recurrence.”

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*\* Please note that numbers in this release may differ slightly from those in the abstract. Many of these investigations are ongoing; the release represents the most up-to-date data available at press time.*

Abstract 67841

Risk Factors Predicting Cancer Recurrence in Lung Cancer Survivors

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**Abstract Body**

**Introduction:** Lung cancer remains the leading cause of cancer death in men and women. While the majority of new cases are diagnosed at advanced stages, the introduction of lung cancer screening should produce a shift to lung cancers diagnosed at earlier stages. However, even at the earliest stage, lung cancer survival remains below the other leading cancers because of the eventual recurrence or second primary tumors (SPT). We analyzed factors associated with lung cancer recurrence in 192 lung cancer survivors who completed surveillance with both chest CT and autofluorescent bronchoscopy (AFB).

**Methods:** After completing definitive treatment, 192 lung cancer survivors with no evidence of active disease (NED) entered active surveillance. Results from CTs (e.g., pulmonary nodules) and AFB (e.g., premalignant lesions and cancers) were captured from the medical record at three participating institutions. Major risk factor information such as smoking status and pack-year exposures (PY), prior cancers, respiratory disease, asbestos exposure, and family history of lung cancer were also collected.

**Results:** Mean duration of surveillance was 8.3 years. Mean age was 62 years (median, range), 95% had a smoking history with median PY= 56, range 35-81. Of the 192 survivors, 72 (38%) experienced a recurrence or new primary lung cancer. Cox proportional hazards ratios (HR) with 95% confidence intervals (CI) for predicting recurrent or second primary lung cancers showed that other cancer recurrence (HR= 4.8; 95% CI (2.2-10.6); p-value <.0001), the presence of a nodule, regardless of size or location (HR= 5.2; 95% CI (1.8-14.5); p-value=.0015), pack-years (PY) of smoking (HR= 1.01; 95% CI (1.0-1.01); p-value=.014), and metaplasia on three AFB exams anywhere in the upper airway (HR= 5.9; 95% CI (1.7-21.4); p-value=.007), were significant predictors of recurrent or second primary lung cancers.

**Conclusions:** Other cancer recurrence, lung nodules on CT, PYs of smoking, and persistent metaplasia were associated with a significant increase in lung cancer recurrence or SPT. This suggests that aggressive ongoing surveillance of lung cancer survivors may be needed for extended periods of time. Additional research on biomarkers of recurrence or SPT is needed for targeted intervention in the carcinogenic process.