



**EMBARGOED UNTIL 14:30 (CET) WEDNESDAY, JULY 6, 2011**

**Nodal Staging by Ultrasound Endoscopy  
and Alternative Image Guided Diagnosis (Oral Session)  
Wednesday, July 6, 2011 14:30-16:00 CET  
Room D202**

**Lead author: Dr. Robert Rintoul  
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Cambridge, U.K.**

### **Endosonography followed by surgical staging improves quality of life, according to ASTER study**

Patients who underwent endoscopic testing prior to surgery for lung cancer had significantly better quality of life at the end of the staging process, with no significant difference in costs between the two strategies, according to data presented at the 14th World Conference on Lung Cancer in Amsterdam, hosted by the International Association for the Study of Lung Cancer (IASLC).

“Given that assessment of lymph glands using the endoscopic approach was more effective, better tolerated by patients and no more expensive than the surgical approaches, we recommend that investigation should commence with the endoscopic tests, reserving the surgical tests as a backup if the endoscopic approaches do not show any evidence of cancer,” said principal investigator Dr. Robert Rintoul of Papworth Hospital in Cambridge, United Kingdom. “We anticipate that this data will change the way in which the mediastinum is assessed in the future.”

Before performing lung cancer surgery, it’s important to determine whether the cancer has spread to the lymph glands in the middle of the chest, or mediastinum. If it has done so, then a surgical operation to attempt to remove the tumor may not be appropriate, Dr. Rintoul said.

Historically, biopsy of these lymph glands has required an exploratory surgical operation such as a mediastinoscopy. But new approaches to reach the lymph glands via the airway or the esophagus using flexible telescopes have been developed; these techniques are called endobronchial and endoscopic ultrasound.

Results of ASTER, a randomized clinical trial to compare the surgical biopsy approach with the endoscopic approaches, were published in the Journal of the American Medical Association in November 2010. They showed that assessing the lymph glands with the endoscopic approaches, using mediastinoscopy as a backup if the endoscopic approach did not show any evidence of cancer, was more effective than using mediastinoscopy alone.

At the end of staging, patients who underwent endosonography reported better quality of life than those randomized to surgical staging, researchers said at the World Conference on Lung Cancer. There was little difference between the two groups at 2 months and 6 months.

Mediastinal staging with endosonography was cost-effective compared with surgery alone, saving £746 (approximately \$1,210 U.S./€845 euros) per patient. The savings rose to £2,124 (approximately \$3,450 U.S./€2,400) per patient among those who had endosonography but did not undergo surgical staging.

Dr. Robert Rintoul will discuss the research with journalists during a WCLC press conference at 10 a.m. CET on Thursday, July 7. For individual interview requests, please call Renée McGaw at +31 20 549 3413 between July 3-7 in the press office at Amsterdam RAI, Amsterdam, the Netherlands. You may also email her at [renee.mcgow@ucdenver.edu](mailto:renee.mcgow@ucdenver.edu)

#### **Abstract 840**

##### **Cost-effectiveness and quality of life results from the ASTER study: Endobronchial and endoscopic ultrasound versus surgical staging in potentially resectable lung cancer**

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#### **1. Background**

In the context of mediastinal staging for potentially operable non-small cell lung cancer we recently published results of ASTER, a multicentre randomised controlled trial in which endosonography, a strategy of combined endoscopic (EUS) and endobronchial (EBUS) ultrasound (followed by surgical staging if these tests were negative for malignancy), had significantly higher sensitivity and negative predictive value and a lower unnecessary thoracotomy rate than surgical staging alone<sup>1</sup>. Furthermore, we reported endosonography alone had similar sensitivity and negative predictive value to surgical staging alone. We now present ASTER quality of life (QoL) and cost-effectiveness outcomes.

#### **2. Methods**

QoL data were collected using the EuroQoL EQ-5D questionnaire at baseline, end of staging and 2 and 6 months post randomisation during the second half of the study. The UK EQ-5D social tariff was applied to calculate utility values from a UK perspective. Quality-adjusted survival was estimated using the area under the utility curve. Resource use information on EBUS/EUS, surgical staging, thoracotomy, surgery other than planned thoracotomy, chemo/radiotherapy and hospital/hospice stays was recorded for all patients. NHS 2008-9 Reference Costs were applied to all standard treatments. EBUS/EUS Reference Costs were not available and so were estimated. Total expected costs over 6 months were estimated by summing the resource use multiplied by its unit cost and taking the sample average for each group. Missing QoL and resource use elements were estimated based on patient characteristics in the analysis.

#### **3. Results**

Of the 241 randomised patients, 144 (60%) provided EQ-5D data at baseline; of these 139 (97%) were followed up at the end of staging, 132 (92%) at 2 months and 124 (86%) at 6 months. At the end of staging, those randomised to endosonography had significantly better QoL than those randomised to surgical staging (utility difference = 0.11, 95%CI 0.02 to 0.19). At all other time points, there was little difference between the groups, so that quality adjusted survival over the 6 months was similar (4.1 vs. 4.0 months respectively). Complete resource use data was available for 172/214 (71%) patients. Other than the number of thoracotomies performed (66% of patients in the surgical staging arm and 53% in the endosonography arm) resource use did not differ between the two groups. The endosonography group had a cost saving of -£746 per patient compared to the surgical staging group but the difference was not significant (95%CI -£2494 to £756). Adapting the analysis to the case whereby patients randomised to endosonography did not undergo surgical staging shifted the cost difference to -£2124 per patient (95%CI -£4560 to -£167) in favour of endosonography with associated probability that endosonography is cost effective at around 90%.

#### **4. Conclusion**

Given that a) the sensitivity of the endosonography arm in the ASTER trial was significantly higher than that of the surgical staging arm; b) QoL post-staging was higher in the endosonography arm and c) there is no difference in cost between the two strategies, mediastinal staging should commence with endosonography proceeding to surgical staging if there is no evidence of malignancy.

1. Annema et al, JAMA 2010;304:2245

### About the IASLC:

The International Association for the Study of Lung Cancer (IASLC), based in Denver, Colorado, U.S.A., is the only global organization dedicated to the study of lung cancer. Founded in 1972, the association's membership includes more than 3,000 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.

IASLC publishes the *Journal of Thoracic Oncology*, a valuable resource for medical specialists and scientists who focus on the detection, prevention, diagnosis and treatment of lung cancer. To learn more about IASLC please visit <http://iaslc.org/>