



**EMBARGOED UNTIL 14:30 (CET) MONDAY, JULY 4, 2011**

**Surgery - Staging (Oral session)  
Monday, July 4, 2011, 14:30-16:00 CET  
Forum**

**Lead author: Dr. Marcin Zielinski, MD  
Pulmonary Hospital  
Zakopane, Poland**

### **TEMLA shows higher diagnostic yield than EBUS or EUS in largest reported series to date**

In the largest reported series yet to compare transcervical extended mediastinal lymphadenectomy (TEMLA) with endoscopic and surgical primary staging and restaging of non-small cell lung cancer (NSCLC), TEMLA showed a significantly higher diagnostic yield, according to research presented at the 14th World Conference on Lung Cancer in Amsterdam, hosted by the International Association for the Study of Lung Cancer (IASLC).

Diagnostic yield refers to the likelihood that a procedure will provide the necessary information to establish a diagnosis.

In the study, 617 patients underwent primary endoscopic staging including endobronchial ultrasound (EBUS) in 400 patients, endoesophageal ultrasound (EUS) in 55 patients and combined EBUS/EUS in 241 patients. TEMLA was performed in primary staging in 375 patients.

The TEMLA procedure included a 5- to 8-centimeter collar incision in the neck, elevation of the sternal manubrium with a special retractor, bilateral visualization of the laryngeal recurrent and vagus nerves and dissection of all mediastinal nodal stations except for the pulmonary ligament nodes (station 9).

The sensitivity of TEMLA in discovering cancer in primary staging was 98.6 percent, compared with 88.9 percent for EBUS/EUS. TEMLA's specificity was 100%, compared with 98.7% with EBUS/EUS. TEMLA's negative predictive value (NPV) was 99.7% and its positive predictive value (PPV) was 100%, compared with NPV of 84.1% and PPV of 99.1% for EBUS/EUS.

In the restaging group EBUS was performed in 43 patients, EBUS and EUS in 9 patients and TEMLA in 89 patients. Again, there was a significant difference in sensitivity (95.5%), specificity (100%), NPV (98.5%) and PPV (100%) in favor of TEMLA. There were no intraoperative injuries of the vitally important mediastinal structures including major vessels, tracheobronchial tree or the esophagus during staging and restaging procedures done with TEMLA.

Dr. Marcin Zielinski 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.mcgaw@ucdenver.edu](mailto:renee.mcgaw@ucdenver.edu)

**Abstract 2593**

**Comparison of diagnostic yield of endoscopic ultrasound staging of Non-Small Cell Lung Cancer (NSCLC) performed with use of Endobronchial Ultrasound (EBUS) and/or Endoesophageal Ultrasound (EUS) with invasive staging of NSCLC performed with use of Transcervical Extended Mediastinal Lymphadenectomy (TEMLA)**

*M. Zielinski, A. Szlubowski, M. Kolodziej, S. Orzechowski, E. Laczynska, J. Pankowski, M. Jakubiak, A. Obrochta*

**1. Background**

The aim of his study is to compare diagnostic yield of endoscopic ultrasound staging of Non-Small Cell Lung Cancer (NSCLC) performed with use of Endobronchial Ultrasound (EBUS) and/or Endoesophageal Ultrasound (EUS) with invasive staging of NSCLC performed with use of Transcervical Extended Mediastinal Lymphadenectomy (TEMLA).

**2. Methods**

All consecutive patients diagnosed as possible candidates for surgical treatment of NSCLC from 1.1.2007 to 31.12.2011 were included. Patients undergoing primary staging and repeated staging (restaging) after neoadjuvant chemo- or chemo-radiotherapy were included. Staging was started with EBUS and/or EUS with Fine Needle Aspiration (FNA) biopsy and cytological study. In case of positive results (discovery of metastatic mediastinal nodes) the patients were referred for chemo- or chemo-radiotherapy. In case of negative results the patients underwent TEMLA. EBUS and EUS with FNA were performed in mild sedation and topical anesthesia. Operative technique of TEMLA included a 5-8 centimeters collar incision in the neck, elevation of the sternal manubrium with a special retractor, bilateral visualization of the laryngeal recurrent and vagus nerves and dissection of all mediastinal nodal stations except for the pulmonary ligaments nodes (station 9). The diagnostic results of EBUS/EUS were compared with the results of TEMLA.

**3. Results**

617 patients underwent primary endoscopic staging including EBUS in 400 patients, EUS in 55 patients and combined EBUS/EUS in 241 patients. TEMLA was performed in primary staging in 375 patients. There was no mortality and morbidity after EBUS and EUS. One patient died on the second day after TEMLA (unknown reason, postmortem was not obtained) and morbidity after TEMLA was in 6.6% patients, including temporary laryngeal recurrent nerve palsy in 2.4% and permanent nerve palsy in 0.3%. There was a significant difference of sensitivity, specificity, NPV and PPV in favour of TEMLA (table). In the restaging group EBUS was performed in 43 patients, EBUS and EUS in 9 patients and TEMLA in 89 patients. There was no mortality and morbidity after EBUS and EUS and no mortality and 3.1% morbidity after TEMLA. There was a significant difference of sensitivity, specificity, NPV and PPV in favour of TEMLA. There were no intraoperative injuries of the vitally important mediastinal structures including major vessels, tracheobronchial tree or the esophagus during staging and restaging procedures done with TEMLA.

Diagnostic parameter	Primary Staging EBUS/EUS 617 patients	Primary staging TEMLA 375 patients	Difference (p)	Restaging EBUS/EUS 52 patients	Restaging TEMLA 89 patients	Difference (p)
Sensitivity	0,889	0,986	P=0,0000	0,792	0,955	P=0,0023
Specificity	0,987	1	P=0,0305	1	1	P=1,000
Negative predictive value (NPV)	0,841	0,997	P=0,0000	0,848	0,985	P=0,0015
Positive predictive value (PPV)	0,991	1	P=0,0722	1	1	P= 1,000

**4. Conclusion**

The results of this largest reported series comparing the endoscopic and surgical primary staging and restaging of NSCLC showed a significant higher diagnostic yield of TEMLA in comparison of EBUS/EUS.

### 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/>