



Standardized Method for Interpreting Cellvizio® In Vivo Microscopic Lung Images Being Developed, According to New Study Presented at ATS

– Researchers Suggest Cellvizio LUNG Confocal Microscopy System Could be Used to Detect Lung Diseases Affecting Respiratory Bronchioles –

Toronto, Canada – May 21, 2008 – Doctors are now formulating standardized methods for interpreting Cellvizio® LUNG *in vivo* microscopic lung images, according to a new study presented at the 2008 American Thoracic Society International Conference.

The 8-patient study found that physician reviewers agreed on certain image characteristics of the lungs generated by Mauna Kea Technology's Cellvizio LUNG confocal microscopy system during bronchoscopy and were able to differentiate between Cellvizio LUNG images of nonsmokers and smokers.

"Cellvizio LUNG detected subtle differences in respiratory bronchioles between smokers and non-smokers," concluded Dr. David Ost, Associate Professor of Medicine at New York University and lead investigator of the study. "This suggests that the technology could be used to detect lung diseases that affect respiratory bronchioles."

This is the first publicly presented U.S. clinical case series to study cellular-level imaging of the alveoli. Sacha Loiseau, Ph.D. president and CEO of Mauna Kea Technologies stated: "We are excited to be a part of this ground-breaking research. We're continually looking to advance our product's effectiveness and positive impact on patients' lives. Creating a standardized method for interpreting Cellvizio LUNG cellular-level images is another important step in that direction."

Reviewers assessed sets of images from each patient for various lung sites, including the main carina, secondary carina, respiratory bronchiole, and alveoli. Images were presented in random order and ranked on brightness, fiber thickness and cellularity. Those that demonstrated high inter-reviewer agreement were compared with smoking status to determine if Cellvizio could detect inflammation due to smoking.

Inter-reviewer agreement for brightness was high. Inter-reviewer agreement for fiber thickness was good for alveoli. Comparing smokers and non-smokers, there was decreased respiratory bronchiole brightness ($p=0.003$).

More About Cellvizio LUNG

Cellvizio is the first and only confocal microscopy system that is compatible with most endoscopes. Cellvizio LUNG is the first technology to enable microscopic imaging of the lung during a standard bronchoscopy procedure.



Until now, visualization of lungs has been limited to the central bronchi due to the narrowing diameter of the terminal bronchi and to the size of existing endoscopes. This major limitation has prevented clinicians from gaining a better understanding of peripheral lung cancers or diffuse interstitial diseases.

Cellvizio LUNG is an innovative and minimally invasive way to explore the lung, and in particular the distal lung. For the first time ever, alveoli can be explored in vivo, in real time and at the cellular level, during Alveoscopy™.

Cellvizio LUNG's high resolution imaging potentially could have a positive impact on life threatening lung diseases such as lung cancer – which standard bronchoscopies fail to detect as often as 60% of the time – and interstitial lung disease, a broad category of lung diseases that can cause everything from shortness of breath to death.

About Mauna Kea Technologies

Mauna Kea Technologies leads the growing in vivo cellular imaging market enabling physicians to visualize, diagnose and treat pathologies that can not be seen using other imaging techniques. Mauna Kea Technologies' flagship Cellvizio system provides microscopic visualization of mucosal tissue and promises to improve clinical outcomes by increasing the diagnostic yield of existing endoscopic procedures. Mauna Kea Technologies is currently focused on the gastroenterology and pulmonology markets. The company plans to expand into other markets in the future. The company also has a distribution agreement with Leica Microsystems to sell products for the Small Animal Imaging market in Europe, the U.S. and Japan. For more information about Mauna Kea Technologies: www.maunakeatech.com.

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Poster Viewing: 10:45–12:15
Room: Area A (Halls A–B, North Building, Level 300), Metro Toronto Convention Centre

Abstract

[Poster Board #A81] Interrater Reliability of Bronchoscopic Confocal Mini-Probe Imaging, [Publication Page: A894]

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Background: Confocal microscopy miniprobes allow real-time visualization of alveoli during bronchoscopy. The goal of this study was to assess the interrater agreement on image characteristics and to assess discriminatory ability for smoking status. **Methods:** Eight patients had miniprobe (Cellvizio) examinations. The miniprobe was passed through a bronchoscope and the airways were examined. Blinded reviewers assessed sets of images. Each set consisted of 2 images from each patient for the following sites: main carina, secondary carina, respiratory bronchiole, and alveoli. Images were presented in random order and ranked from lowest to highest on brightness, fiber thickness, and cellularity. Rankings were compared by intraclass correlation coefficients. Those that demonstrated high interrater agreement were compared with smoking status to determine if miniprobes could detect inflammation due to smoking. **Results:** No complications occurred. Interrater agreement for brightness was high. Interrater agreement for fiber thickness was good for alveoli. Comparing smokers and non-smokers, there was no difference in brightness of the main carina ($p=0.588$), secondary carina ($p=0.337$), or alveoli ($p=0.67$). Smokers had decreased respiratory bronchiole brightness ($p=0.003$). Comparing smokers and non-smokers there was no difference in alveolar ($p=1.0$) or respiratory bronchiole ($p=0.192$) fiber thickness. **Conclusions:** Miniprobe imaging has a high degree of interrater agreement for brightness and fiber thickness of alveoli. The miniprobe detected subtle differences in respiratory bronchioles between smokers and non-smokers. This suggests that miniprobes could be used to detect lung diseases that affect respiratory bronchioles.