

Study shows breath analysis could help diagnose pulmonary nodules

September 16 2012

A pilot study, published in the October 2012 issue of the International Association for the Study of Lung Cancer's (IASLC) *Journal of Thoracic Oncology*, showed that breath testing could be used to discriminate between benign and malignant pulmonary nodules. The study looked at 74 patients who were under investigation for pulmonary nodules and attended a referral clinic in Colorado between March 2009 and May 2010.

Researchers from Israel and Colorado collected exhaled breath from each patient, analyzing the exhaled [volatile organic compounds](#) using [gas chromatography](#) with [mass spectrometry](#) and information from chemical nanoarrays, which have been developed by Prof. Hossam Haick and his colleagues in the Technion-Israel Institute of Technology. The patients also underwent a bronchoscopy, wedge resection and/or lobectomy, whichever was required for final diagnosis. Nodules that either regressed or remained stable over a 24-month period were considered benign.

The two techniques accurately identified that 53 pulmonary nodules were malignant and 19 were benign. Furthermore, the nanoarrays method discriminated between adenocarcinoma and [squamous cell carcinoma](#) and between early versus advanced disease.

This kind of testing could help solve some of the problems computed tomography screening has created. While low-dose CT screening has reduced the mortality rate by 20 percent, many people have to undergo invasive procedures only to find out their pulmonary nodules are not

cancerous. The false positive rate is 96 percent. This testing could serve as a secondary screener for patients who were found to have pulmonary nodules after CT screening.

Authors say, "the reported breath test in this study could have significant impact on reducing unnecessary investigation and reducing the risk of procedure-related morbidity and costs. In addition, it could facilitate faster therapeutic intervention, replacing time-consuming clinical follow-up that would eventually lead to the same intervention."

Provided by International Association for the Study of Lung Cancer

Citation: Study shows breath analysis could help diagnose pulmonary nodules (2012, September 16) retrieved 9 April 2024 from

<https://medicalxpress.com/news/2012-09-analysis-pulmonary-nodules.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--