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TALENT study supports NLCST and NELSON trial results

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A study presented today by researchers with the Ministry of Health and Welfare in Taiwan confirmed the effectiveness of low-dose computed tomography (LDCT) screening in a pre-defined, never-smoker, high-risk population. The research was presented today at the International Association for the Study of Lung Cancer 2021 World Conference on Lung Cancer.

In Taiwan, lung cancer is the leading cause of cancer mortality, and 53% of those have died of lung cancer were never-smokers. The National Lung Cancer Screening Trial (NLCST) and NELSON Trials demonstrated that the use of low-dose CT is effective for lung cancer screening; however, most of the lung cancer screenings focused on heavy smokers, which may not be suitable for an East Asian population as this population tend to have higher incidence of lung cancer in never-smokers.

The researchers, led by Dr. Pan Chyr Yang, of the National Taiwan University College of Medicine, Taipei/Taiwan, developed by the Taiwan Lung Cancer Screening for Never Smoker Trial (TALENT), a nationwide lung cancer LDCT screening study focused on never-smokers. TALENT's goal is also to develop an effective strategy for screening of lung cancer in never-smoker and establish a risk prediction model to identify high-risk population that may benefit from LDCT screening.

The TALENT study enrolled and followed 12,011 individuals between

February 2015 and July 2019. To be enrolled in the trial, participants must have been between 55 and 75 years of age and never-smokers. In addition, participants must have had one of the following risk factors for lung cancer: family history of lung cancer within the third-degree of relations, passive smoking exposure, tuberculosis or chronic obstructive pulmonary disease, cooking index of 110 or greater, and absence of ventilation during cooking.

Of the 12,011 individuals, 6,009 (50 %) had family history of lung cancer, and 2,094 (17.4%) were considered positive on screening. Of these, 395 participants (3.3%) underwent lung biopsies or surgeries. Lung cancer (2.6%) was diagnosed in 313 patients, with 255 (2.1%) diagnosed with invasive lung cancer—all but one was adenocarcinoma and 96.5% were diagnosed with stage I disease. The remaining 81 patients had benign lung disease or a malignancy other than cancer.

The prevalence of lung cancer was 3.2% and 2.0% (p

"Most importantly, 96.5% patients were stage 0 or 1, [and] were potentially curable by surgery," said Dr. Yang. "Our study also revealed the high risk of family history, especially those [participants] with a first-degree family history of lung cancer."

"The study revealed that LDCT screening for lung cancer in never-smoker with high risk may be feasible, which is very important to all who are fighting against lung cancer, [considering] the increasing global threat for lung cancer in never-smoker. Most importantly, the study showed that family history of lung cancer may increase the risk of lung cancer," he added.

Dr. Yang said his team plans to develop a risk score predictor that includes the family history, and genetic and environmental factors for identification of high-risk population who can benefit from LDCT

screening for lung cancer in never-smokers. A standard screening protocol will be established, and Dr. Yang and his team will advise the authority to formally implement the LDCT for lung cancer screening in Taiwan.

"We hope the screening program can benefit patients suffering from lung cancer especially in those countries with high incidence of lung cancer in never smoker," he said.

"This study paves the way to additional studies in this unique group of high-risk individuals," Dr. Scagliotti, IASLC interim CSO said, "in order to maximize the benefits of early detection of lung cancer."

Provided by International Association for the Study of Lung Cancer