EUROPEAN RESPIRATORY SOCIETY ANNUAL CONGRESS
VIENNA, AUSTRIA, 1–5 SEPTEMBER

Janet Stocks, professor of respiratory physiology at University College London Institute of Child Health, London

First lung function equations for all ages and ethnicities

The first global multiethnic reference equations for assessing lung function in people of all ages (www.lungfunction.org) have been agreed by respiratory societies around the world. The lung growth charts will help to improve the accuracy of diagnosing and monitoring respiratory conditions using spirometry.

'These equations, now endorsed by six major international lung societies around the world, are a major step forward in providing a robust measurement for lung function testing,' said Janet Stocks, professor of respiratory physiology at University College London Institute of Child Health and a member of the Global Lung Function Initiative that developed the new equations.

The group collected data from 74 187 healthy non-smokers aged 3–95 years and derived new continuous all-age multiethnic lung growth charts using modern statistical methods. Previous charts were generally applicable only to white subjects of European descent, but the new charts include people of black, oriental/Chinese and mixed ethnic origins. The new charts should allow more consistent interpretation of lung function in different centres.

Endorsement of the new equations by respiratory societies means that companies are now incorporating them into spirometers. 'It will revolutionize the way in which we diagnose and manage lung disease,' Professor Stocks said. 'Having lung function equations for all age groups mean we will be better able to identify children most likely to benefit from treatment for lung conditions and avoid unnecessary medication in those not needing it. We will also be able to diagnose and manage COPD [chronic obstructive pulmonary disease] more effectively in the elderly.'

Susan Mayor

Ivacaftor improves lung function and symptoms in cystic fibrosis patients with specific mutation

Ivacaftor, an oral agent that potentiates a membrane channel blocked in patients with cystic fibrosis caused by the G551D mutation, significantly improves lung function and reduces pulmonary exacerbations, according to clinical trials reported at the congress. Improved lung function and good tolerability was sustained with continued treatment on open label follow up.

The STRIVE study randomized 161 patients aged 12 years and over with cystic fibrosis and at least one copy of the G551D mutation in the CFTR gene to ivacaftor (150 mg every 12 hours) or placebo. There was a mean absolute improvement of 10.6% in predicted forced expiratory volume in 1 second (FEV_1) after 24 weeks' treatment with ivacaftor compared to placebo ($P<0.0001$), sustained at 10.5% at 48 weeks.

The ENVISION study, which included 52 children aged 6–11 years, showed similar absolute improvement of 12.5% in predicted FEV_1 with ivacaftor at 24 weeks compared to placebo ($P<0.0001$), with 10.0% improvement maintained at 48 weeks.

STRIVE showed a significant reduction in pulmonary exacerbations and clinically significant improvement in the respiratory domain of patients' quality of life with ivacaftor.

'Ivacaftor is the first medicine to treat the underlying cause of cystic fibrosis in people with the G551D mutation in the CFTR gene,' said Stuart Elborn, Professor of Respiratory Medicine at Queen's University, Belfast, Northern Ireland and a principal investigator. 'These data ... confirm that ivacaftor has the potential to make a significant difference to the lives of children, adolescents and adults with this form of cystic fibrosis.'

Susan Mayor

E-cigarettes are not a safe alternative to conventional tobacco smoking

Even one electronic (e-)cigarette appears to have acute adverse effects on the lung, according to preliminary results of a small study from Greece.

The study included eight people who had never smoked (never-smokers) and 24 smokers (11 with normal spirometry and 13 with either chronic obstructive pulmonary disease or asthma), who each used an e-cigarette for 10 minutes.

In the never-smokers there was a significant increase in airway resistance from a mean of 182% to 206%, while the increase in smokers with normal spirometry was 176% to 220%. One e-cigarette seemed to have no immediate effect on airway resistance in smokers with already compromised lung function, although small airways function deteriorated.

According to Dr Christina Gratziou, University of Athens, lead investigator: 'We need to look beyond heart rate and blood pressure to the lung. As investigators, we support the European Respiratory Society in stating that e-cigarettes should not be promoted as a safer alternative to conventional cigarettes or as a tool for smoking cessation.'

Sue Lyon