COPD and GOLD Stage I

To the Editor:

An abnormally low FEV₁/FVC ratio is universally accepted as indicative of obstructive lung disease. Clearly, the choice of cutoff to define abnormality is important. The GOLD (Global Initiative for Chronic Obstructive Lung Disease) group set the lower limit of normal (LLN) at 0.7 irrespective of age, defining GOLD COPD stage I as FEV₁/FVC below 0.7 and FEV₁ above 80% predicted.1 In a recent issue of CHEST (January 2012), Mannino and Diaz-Guzman2 argue that patients in GOLD stage I are at increased risk of premature death from respiratory causes.

As shown in many publications, the 0.7 cutoff is too simplistic. After age 45, the LLN based on the fifth centile of the FEV₁/FVC ratio falls progressively below 0.7, meaning that the 0.7 cutoff identifies many older patients above the LLN as false positives. Several studies have tried to validate GOLD stage I for identifying obstructive lung disease:

- In asymptomatic subjects, it was neither associated with premature death nor with an abnormal decline in FEV₁, respiratory care use, or quality of life compared with a reference group.3
- It was not associated with premature death or respiratory symptoms.4
- The adjusted hazard ratio for premature death was not significant.5
- Now, Mannino and Diaz-Guzman2 state that subjects in GOLD stage I who are above the LLN are at increased risk of premature death from respiratory causes. They fail to present adjusted hazard ratios for respiratory death. Hence, their conclusion lacks evidence; it also contradicts a previous study where the same analysis was done on the same data.6

Thus, there is no evidence to support the use of GOLD stage I. Conversely, there is considerable evidence in favor of the LLN:

- Only GOLD stage I with FEV₁/FVC below the LLN was associated with increased risk of death.6,7
- The use of the LLN for both FEV₁/FVC and FEV₁, rather than a fixed ratio and 80% predicted, identified persons with an increased risk of death and prevalence of respiratory symptoms.8
- “After correction for potential confounders, only severe COPD as defined by the BTS [British Thoracic Society] criteria was still associated with mortality.”9

We conclude that GOLD stage I is not associated with respiratory disease or death from respiratory causes unless FEV₁/FVC is below the LLN. Incorrectly labeling subjects as having COPD by the GOLD criteria has detrimental consequences for the individual and family: It incurs high costs for society, and it hampers research into the causes of COPD and its treatment. The mystery is why the GOLD group continues to encourage its use.

Philip H. Quanjer, MD, PhD
Rotterdam, The Netherlands
Tim J. Cole, ScD
London, England

Affiliations: From the Department of Pulmonary Diseases and Department of Paediatrics (Dr Quanjer), Erasmus Medical Centre, Erasmus University; and MRC Centre of Epidemiology for Child Health (Dr Cole), UCL Institute of Child Health.

Financial/nonfinancial disclosure: The authors have reported to CHEST that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

Correspondence to: Philip H. Quanjer, MD, PhD, Kervel 19, 7443 GT, Nijverdal, The Netherlands; e-mail: pquanjer@xs4all.nl

© 2012 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians (http://www.chestpubs.org/site/misc/reprints.xhtml).

DOI: 10.1378/chest.11-2840

REFERENCES

Contemporary Aminophylline Use for Status Asthmaticus in Pediatric ICUs

To the Editor:

Methylxanthines, including aminophylline and theophylline, have long played a significant role in the treatment of pediatric acute asthma exacerbations.1 Current expert guidelines recommend against aminophylline use for acute exacerbations because of the availability of selective β₂-agonists such as albuterol, in addition to the narrow therapeutic index and the limited evidence for efficacy of this drug.1,2 We sought to examine whether aminophylline continues to be used for status asthmaticus in pediatric ICUs (PICUs) by surveying PICU fellowship training programs.

We administered an e-mail-based questionnaire to 58 pediatric critical care fellowship directors in the United States representing a geographic sampling of small to large training programs. The survey consisted of 15 questions pertaining to the use of