The Prevalence of Pulmonary Embolism in Acute Exacerbations of COPD

To the Editor:

With great interest we read the systematic review by Rizkallah et al in CHEST reporting a high prevalence of pulmonary embolism (PE) during an acute exacerbation of COPD (AECOPD). The authors suggest that one of four COPD patients who require hospitalization for an acute exacerbation may have a PE. In our opinion however, the results of their study are skewed due to inadequate study sampling and a potential selection bias.

For their review, Rizkallah et al selected five studies. Two studies did not estimate the prevalence of PE during an AECOPD, but rather calculated the coexistence of COPD in patients with a PE. Assuming that every patient with a PE presents with a AECOPD is in our opinion not justified.

The three other studies selected display a high heterogeneity in PE prevalence. Rizkallah and colleagues argue that the higher prevalence is seen exclusively in hospitalized patients. However, all three studies also included patients from the emergency department. In our opinion, the discrepancy is due to a selection bias. In two studies, patients with an obvious infective cause of their AECOPD were excluded. Moreover, one of these studies only included patients with a d-dimer level > 500 ng/mL. The only study excluding these patient categories showed a low PE prevalence of 3%.

We therefore argue that it may be both the exclusion of certain patient categories as well as the erroneous selection of studies that has artificially augmented the result presented by Rizkallah and colleagues. The prevalence of PE in AECOPD remains open to debate.

Sami Simons, MD
Erik van der Heijden, MD, PhD
Yvonne Heijdra, MD, PhD
Radboud University Medical Centre
Nijmegen, the Netherlands

The authors have reported to the ACCP that no significant conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

© 2009 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians (www.chestjournal.org/site/misc/reprints.shtml).

Correspondence to: Sami Simons, MD, Radboud University Medical Centre, Department of Pulmonary Diseases (454), PO Box 9101, 6500 HB Nijmegen, the Netherlands; e-mail: S.Simons@long.umcn.nl
DOI: 10.1378/chest.08-2644

REFERENCES

Response

To the Editor:

We thank Dr. Simons and colleagues for pointing out the limits of our metaanalysis. The studies that were included in the review generally excluded patients who had an infectious source for their acute exacerbation. Thus, the results of the metaanalysis should be generalized only to cases in which an infectious etiology for the exacerbation has been carefully ruled out. While we agree with Dr. Simons and colleague’s general comments, we have concerns regarding their use of vague and inappropriate epidemiologic terminology, which obfuscate rather than facilitate discourse on this matter. First, contrary to Dr. Simons and colleague’s assertion, there was no selection bias. The selection of the studies for the present metaanalysis was transparent, inclusive, and consistent with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) Guidelines. The primary studies excluded patients with an infectious etiology, which as stated previously, limits the generalizability but not the validity of the findings. Second, there was no “inadequate study sampling.” We did not sample studies; we included all published studies that met the a priori inclusion and exclusion criteria. Third, there was no “exclusion of patient categories.” We did not exclude patients or studies based on categories such as age, sex, race, lung function, or any other variables.

In sum, the concerns raised by Dr. Simon and colleagues are not justified. Nevertheless, we believe (as Dr. Simon and colleagues do) that the prevalence of venous thromboembolic (VTE) disease in acute exacerbations of COPD remains open to debate not because of the inherent methodologic biases of the present metaanalysis but because of the paucity of large, well-conducted multicenter studies that have examined this issue. Until such