

# Why Anemia is Associated with Increased Mortality in AECOPD, What Should We Do? [Letter]

Ting-Ting Zhou

Lanzhou University Second Hospital, Lanzhou, People's Republic of China

Correspondence: Ting-Ting Zhou, Lanzhou University Second Hospital, Cuiyinmen 82, Chengguan District, Lanzhou, Gansu, 730030, People's Republic of China, Email zhoutt20@126.com

## Dear editor

We read with great interest and peruse the recently published article by Garcia-Pachon Eduardo and Isabel Padilla-Navas that investigates the impact of anemia on acute exacerbation of chronic obstructive pulmonary disease (AECOPD) patients' long-term mortality.<sup>1</sup> The authors have ensured a minimum follow-up of 3 years of 125 patients, and conducted comprehensive statistical analysis including Kaplan–Meier analysis and Cox proportional hazard regression analysis. We thank the authors for their hard work and contributions to AECOPD clinical study. As is known to all, AECOPD management is really a big challenge for every pulmonologist.

However, the study results and discussion maybe could focus more on the main factor of the age of the included patients. We believe the findings of the authors in this paper, while the important factor of age should be also taken into consideration by our readers.

Firstly, as shown in Table 1, AECOPD patients with anemia were significantly older than patients without anemia (median, 78 vs 71 years). Although the comparable baseline characteristics in observational retrospective analysis is not necessary, the potential influence should to be noticed. Secondly, as shown in Table 2, deceased patients were also significantly older than surviving patients (median, 77 vs 69 years). Thirdly, as in Table 4, multivariate hazard ratios by Cox analysis were conducted to explore the difference variables, and anemia, age, dyspnea, exacerbations, and length of admission were found as independent factors of mortality. Previous studies reported that persons aged 70 years or older have high prevalence of anemia.<sup>2</sup> Meanwhile, the elderly have high risk of all-cause mortality, and especially old patients with anemia are associated with higher risk of mortality.<sup>3</sup> Age, anemia, and mortality are reported to have strong correlation with each other.<sup>2,3</sup> Therefore, the calculated value of anemia (HR = 3.8) was probably affected by statistical correlation, because Cox analysis firstly requires independence of each variable and correlated variables might enhance the effect size of HR.

So it follows that age plays an unavoidable role in anemia-associated mortality of AECOPD. Further statistical analysis by using propensity score matching (PSM) may be useful to investigate this in the future.<sup>4</sup> Furthermore, as pulmonologists what should we do for AECOPD patients with anemia in clinical practice, to treat or not to treat? By our experience, anemia needs to be regarded as a “result” of decompensated status of AECOPD and/or COPD. Different underlying causes such as infection, chronic kidney disease-related erythropoietin resistance, congestive heart failure, malnutrition, or iron deficiency should be confirmed at first. Then individualized therapy rather than transfusion was recommended to treat anemia if possible. And by our observation, partial COPD patients due to malnutrition or iron deficiency may substantially benefit from treatment, especially regarding aspects of the quality of life, as well as mortality.



## Disclosure

The author reports no conflicts of interest in this communication.

## References

1. Garcia-Pachon E, Padilla-Navas I. The impact of anemia on long-term mortality in hospitalized patients with exacerbation of chronic obstructive pulmonary disease. *Int J Chron Obstruct Pulmon Dis.* 2024;19:2229–2237. doi:10.2147/COPD.S469627
2. Penninx BW, Pahor M, Woodman RC, et al. Anemia in old age is associated with increased mortality and hospitalization. *J Gerontol Ser A.* 2006;61(5):474–479. doi:10.1093/gerona/61.5.474
3. Stauder R, Valent P, Theurl I. Anemia at older age: etiologies, clinical implications, and management. *Blood J Am Soc Hematol.* 2018;131(5):505–514.
4. Kane LT, Fang T, Galetta MS, et al. Propensity score matching: a statistical method. *Clin Spine Surg.* 2020;33(3):120–122. doi:10.1097/BSD.0000000000000932

Dove Medical Press encourages responsible, free and frank academic debate. The content of the International Journal of Chronic Obstructive Pulmonary Disease 'letters to the editor' section does not necessarily represent the views of Dove Medical Press, its officers, agents, employees, related entities or the International Journal of Chronic Obstructive Pulmonary Disease editors. While all reasonable steps have been taken to confirm the content of each letter, Dove Medical Press accepts no liability in respect of the content of any letter, nor is it responsible for the content and accuracy of any letter to the editor.

**International Journal of Chronic Obstructive Pulmonary Disease**

**Publish your work in this journal**

The International Journal of COPD is an international, peer-reviewed journal of therapeutics and pharmacology focusing on concise rapid reporting of clinical studies and reviews in COPD. Special focus is given to the pathophysiological processes underlying the disease, intervention programs, patient focused education, and self management protocols. This journal is indexed on PubMed Central, MedLine and CAS. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/international-journal-of-chronic-obstructive-pulmonary-disease-journal>

**Dovepress**  
Taylor & Francis Group