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Letter to the Editor

Clinical Implications of *Pseudomonas Aeruginosa* Colonization in Chronic Obstructive Pulmonary Disease Patients: Is There Enough Evidence?

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Abbreviations:

AECOPDs=acute exacerbations of COPD; **COPD**=chronic obstructive pulmonary disease; **PA**=*Pseudomonas aeruginosa*

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To the Editor

We read with interest the study of Kwok et al regarding the clinical implications of *Pseudomonas aeruginosa* (PA) colonization in patients with chronic obstructive pulmonary disease (COPD).[1] This gram-negative bacteria has been associated with increased mortality in patients with cystic fibrosis and bronchiectasis,[2,3] and its ability to form antibiotic-resistant biofilms may result in persistent colonization of the airways.[4] Nevertheless, its clinical impact in people with COPD who are found to be colonized with this bacterial pathogen, during stable disease, needs further clarification.

The authors are to be commended for conducting a prospective cohort study aiming to identify the impact of PA colonization on acute exacerbations of COPD (AECOPDs), severe AECOPDs, extrapulmonary complications, and survival. During a mean follow-up of approximately 2 years, the 33 (10.1%) patients who were colonized with PA did experience a significantly higher prevalence of AECOPDs and severe AECOPDs. However, in the results, the authors state that there was also a statistically significant increase in mortality risk in PA colonized patients, a comment which cannot be correct given the confidence interval for the hazard ratio (1.06 [95% CI=0.48–2.32, p=0.89]). The small number of deaths in the colonization group (n=7 [21.2%]) during the relatively short follow-up period may have limited the possibility of identifying any difference, and the small sample size may not have allowed for a potential subanalysis between patients who received and those who have not received appropriate treatment.

In a retrospective cohort study[5] that our group published in 2014, a group of 66 PA colonized COPD patients were compared 1 to 1 with a matched group of noncolonized COPD patients in terms of survival; mean population survival was approximately 81 months and although the number of deaths over the longer follow-up period was higher (39%), no significant impact of PA colonization was found on mortality, even after adjusting for PA eradication treatment. Of note, our findings with respect to AECOPDs were in agreement with the study of Kwok et

al as colonized patients had a significantly higher number of exacerbations.

Understanding the clinical and prognostic impact of PA colonization in stable COPD is of significant clinical value, as it would guide the clinical decision of how aggressively to pursue attempts to eradicate it. As several published data come from retrospective analyses or small cohort studies, large, prospective, long-term clinical studies having as a primary outcome the impact of PA eradication on clinical course, morbidity and mortality are needed to give a definite answer to this question.

Declaration of Interest

The authors have no conflicts to declare.

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