# The perfect storm: when COPD meets bronchiectasis

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Shareable abstract (@ERSpublications)
**COPD can coexist with bronchiectasis (BE). These patients have different clinical profiles compared to those with BE with fixed airflow limitation.** https://bit.ly/3Z9qNOb

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COPD and bronchiectasis (BE) are two major respiratory conditions characterised by the presence of chronic respiratory symptoms and an increased risk for future events and disability [1]. Some patients with COPD can exhibit radiological evidence of BE, bringing to light the COPD-BE phenotype [2]. The association between COPD and BE is gaining increasing recognition, with significant implications for clinical outcomes and management (figure 1). One initiative that has been recently published is the ROSE (radiology, obstruction, symptoms and exposure) criteria to identify patients with COPD-BE phenotype and separate them from BE patients without chronic airflow limitation and/or exposures [3]. The ROSE criteria were firstly proposed by an expert group and afterwards were validated in a European registry (EMBARC), showing that COPD-BE patients defined by ROSE criteria had worse outcomes than those without COPD [4]. However, to date there has not been published data on how this criteria could apply to eastern populations, which may show different results to European ones [5].

In this issue of *ERJ Open Research*, Chen *et al.* [6] apply the ROSE criteria to explore the prevalence and clinical impact of the COPD-BE association in two East Asian cohorts, shedding new light on a population that has been underrepresented in previous research. The study stands out for its comprehensive approach, combining a prospective and a large multicentre retrospective cohort, allowing for a robust validation of the ROSE criteria in this specific demographic.

One of the key findings of the study is the high prevalence of the COPD-BE overlap, identified in 16.5% of the participants, with higher rates in the prospective cohort. These patients were predominantly older males with more severe respiratory symptoms, worse lung function and a greater reliance on inhalation therapies. Most notably, this group exhibited a significantly increased risk of exacerbations and hospitalisations compared to those with bronchiectasis alone or those without fixed airflow limitation. This reinforces the value of the ROSE criteria not only in identifying this overlap but also in stratifying patients based on their risk of poor clinical outcomes [7].

Interestingly, the study also highlights the similarities between patients with COPD-BE overlap and those with nonsmoking bronchiectasis and fixed airflow obstruction (FAO). Although both groups shared similar clinical presentations, such as increased dyspnoea and poor lung function, there were some notable differences in airway microbiology, with an increased risk for isolation of *Klebsiella pneumoniae* in COPD-BE and *Pseudomonas aeruginosa* in FAO. This difference in pathogen colonisation is crucial for clinicians, as it may have implications for antibiotic choice and the long-term management of infections in these patients. The data suggest that while the COPD-BE association may behave similarly to nonsmoking bronchiectasis with FAO in terms of symptoms and severity, distinct underlying mechanisms are involved, which could inform different therapeutic strategies [8]. This aspect of the study opens new questions regarding the pathophysiological mechanisms driving these differences and how they can be addressed in clinical practice [9].

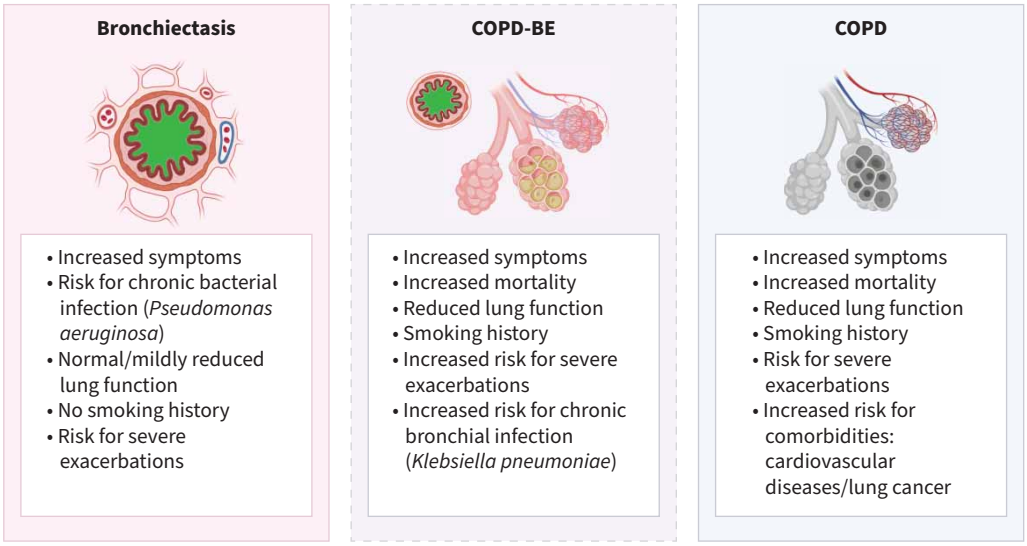


FIGURE 1 Differentiating characteristics among bronchiectasis (BE), COPD and COPD-BE patients. Image partly created with BioRender.com

Despite its strengths, the study has some limitations that should be acknowledged. The retrospective nature of one of the cohorts introduces potential biases, particularly regarding the differences in sample collection methods between the prospective and retrospective cohorts. In the prospective cohort, samples were obtained using bronchoalveolar lavage, while in the retrospective cohort, sputum samples were used. This difference may have impacted the observed microbiological profiles and the severity of the disease, potentially skewing the results. Moreover, the lack of a direct comparison with pure COPD cohorts limits our understanding of how the COPD-BE compares to COPD without BE, especially in East Asian populations. It would have been valuable to include a group of patients with COPD alone to further differentiate the impact of bronchiectasis on clinical outcomes in this population.

Clinically, this research emphasises the importance of recognising the COPD-BE association in daily practice. Patients identified through the ROSE criteria are at higher risk of exacerbations and hospitalisations, which highlights the need for targeted management strategies to mitigate these risks. The higher exacerbation rates in these patients suggest that they may benefit from a more aggressive approach to treatment, including optimising inhaled therapies and considering the use of macrolides or other anti-inflammatory treatments to reduce the frequency of exacerbations. Additionally, the increased risk of infections in these patients underscores the need for routine monitoring of airway pathogens and potentially the use of long-term antibiotic therapy in select cases [10]. The findings suggest that clinicians should be particularly vigilant when treating patients with this condition, as they may benefit from more intensive monitoring and possibly from tailored therapeutic interventions [11, 12].

Looking forward, the study opens several avenues for future research. Further investigation into the microbiological and inflammatory differences between the COPD-BE group and those with nonsmoking bronchiectasis and FAO could lead to more personalised treatment approaches [12]. Understanding the immunological and inflammatory profiles of these patients may help tailor anti-inflammatory therapies and improve outcomes. Additionally, long-term follow-up studies are needed to better understand the progression of BE in these subgroups, particularly in terms of exacerbation frequency and long-term survival [13–15], especially compared to COPD patients. As with other chronic lung diseases, personalised medicine is likely to play an increasingly important role in the future management of COPD-BE, with treatment strategies that are adapted to the individual patient based on their specific clinical and microbiological profile, with a clear differentiation from COPD management [16].

To summarise, this study provides a valuable contribution to our understanding of the COPD-BE phenotype, particularly in the context of East Asian populations that have not been adequately represented in previous studies. The ROSE criteria have proven to be a useful tool for identifying high-risk patients and could play an important role in guiding future research and clinical practice. These findings should encourage further exploration into the unique features of this patient population, differentiating them from

either COPD or bronchiectasis patients and ultimately improving the outcomes for those affected by this challenging condition.

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