



## The coexistence of asthma and COPD: some considerations about prevalence and lung function decline

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To the Editor:

With great interest we read the editorial by MANNINO [1] regarding the investigation on the coexistence between asthma and COPD that we conducted using data from the population-based European Community Respiratory Health Survey (ECRHS) [2]. The ECRHS is an international cohort study based on two-stage sampling, where a 20% random sample of participants in a postal screening was invited to take part in a clinical assessment, along with a sample enriched for subjects with respiratory symptoms [3]. After a motivating historical view on the concept of asthma–COPD overlap, the author underlined how a more comprehensive understanding of the heterogeneity and complexity of this condition might help reshaping clinical decision-making and result in more precise disease treatment.

The author expressed interest in estimating the prevalence of asthma+COPD in the general population [1]. Since the original analysis was based on the combined sample (random+symptomatic) and estimating prevalence proportions was not among the study objectives, there were no appropriate data to obtain such figures in the article and supplements. For this reason, we calculated the proportion of subjects having asthma+COPD among ECRHS participants with either of the two conditions belonging to the random sample alone, which is more likely to correctly represent the target study population (table 1). In the random sample, the proportion of subjects with COPD having asthma+COPD was 48.8% when using the lower limit of normal (LLN) criterion to define persistent airflow obstruction, and 42.6% when using the Global Initiative for Chronic Obstructive Lung Disease (GOLD) fixed cut-off criterion. Likewise, the proportion of subjects with current asthma having asthma+COPD was 15.7% and 22.7% when using the LLN and GOLD criteria, respectively.

**TABLE 1** Distribution of asthma and COPD according to the lower limit of normal (LLN) and Global Initiative for Chronic Obstructive Lung Disease (GOLD) criteria for persistent airflow obstruction in the ECRHS random sample, and proportion of subjects having asthma+COPD among those with either disease alone

	LLN (FEV <sub>1</sub> /FVC <LLN)	GOLD (FEV <sub>1</sub> /FVC <0.70)
No respiratory disease <sup>#</sup>	3235 (77.6%)	3124 (75.3%)
Past asthma alone	206 (4.9%)	197 (4.7%)
Current asthma alone	528 (12.7%)	491 (11.8%)
Asthma+COPD	98 (2.4%)	144 (3.5%)
COPD alone	103 (2.5%)	194 (4.7%)
Total	4170 (100.0%)	4150 (100.0%)
Proportion of subjects with asthma+COPD among those with:		
COPD <sup>¶</sup>	98/201 (48.8%)	144/338 (42.6%)
Current asthma <sup>†</sup>	98/626 (15.7%)	144/635 (22.7%)
Ever asthma <sup>§</sup>	98/832 (11.8%)	144/832 (17.3%)

<sup>#</sup>: subjects without past/current asthma alone, asthma+COPD, COPD alone, and with post-bronchodilator forced expiratory volume in 1 s to forced vital capacity ratio (FEV<sub>1</sub>/FVC) ≥LLN or 0.70; <sup>¶</sup>: combination of asthma+COPD and COPD alone; <sup>†</sup>: combination of asthma+COPD and current asthma alone; <sup>§</sup>: combination of asthma+COPD, past asthma and current asthma alone. ECRHS: European Community Respiratory Health Survey.



Shareable abstract (@ERSpublications)  
Mounting evidence suggests that FEV<sub>1</sub> decline is slower among patients with COPD and asthma compared to those with COPD alone <https://bit.ly/33NyoJq>

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We observed a slower annual decline of forced expiratory volume in 1 s (FEV<sub>1</sub>) among the subjects with asthma+COPD than among those with COPD alone. Rather than being a sparse result, we underline that almost all other published studies are consistent with this finding. Indeed, a literature review is reported in supplementary table E9 [2], which summarises results from publications where a direct comparison of FEV<sub>1</sub> annual decline between asthma+COPD and COPD alone has been documented (in mL per year or % predicted per year). Furthermore, WHITTAKER *et al.* [4] found that, in a primary care population, patients with COPD that were also affected by asthma were less likely to be fast FEV<sub>1</sub> decliners (OR 0.93, 95% CI 0.86–1.01) compared to patients without asthma. MANNINO [1] appropriately argued that, in our study, participation bias is a possible explanation for such finding, due to attrition of participation between ECRHS I and ECRHS III. However, data from supplementary table E4 would suggest that this is an unlikely explanation, since FEV<sub>1</sub> at baseline was 98.8 and 99.6% predicted on average for the participants in ECRHS I and the subgroup of subjects also taking part in ECRHS III, respectively. Focusing on low lung function, we report that the proportion of individuals with FEV<sub>1</sub> <70% predicted at baseline was quite similar between ECRHS I (2.3%) and ECRHS III (1.9%).

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Conflict of interest: None declared.

#### References

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