



## Prevalence of Asthma and the Comorbidity Between COPD and Asthma

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### DESCRIPTION

Despite having different pathophysiologies, asthma and Chronic Obstructive Pulmonary Disease (COPD) are both airway disorders with comparable clinical symptoms. The condition known as Asthma-COPD Overlap (ACO) is defined by overlapping clinical symptoms from both illnesses. The categorization and clinical characteristics of ACO have been the subject of an increasing number of investigations. The reported prevalences of ACO vary greatly depending on the diagnostic criteria utilised, and there is still no agreement on specific diagnostic criteria. The prevalence of ACO in combined COPD and severe asthma cohorts has received very little attention, despite the abundance of publications on research in the asthma and COPD cohorts.

There have been several attempts to classify the phenotypes of ACO, but a consensus has not yet been reached concerning appropriate classification criteria. Patients with ACO can be classified according to differences in ACO phenotype, mostly on the basis of eosinophilic inflammation and smoking history. These criteria have been used to categorise and compare COPD patients according to phenotype, demonstrating variations in clinical characteristics. There hasn't been any research with cohorts of severe asthma and COPD patients where participants were split into several phenotypic groups.

ACO has traits similar to both asthma and COPD, and its phenotype is determined by the aspect that predominates. As a result, numerous studies have tried to categorise ACO patients based on their phenotype. Another study used clustering analysis to divide ACO patients into four phenotypes based on age, BMI, exacerbation, smoking, dyspnea score, and comorbidities. One study categorised ACO patients based on smoking and wheezing.

Rhee proposed a simple blood eosinophil count and smoking history-based classification of ACO patients into four phenotypes. These standards are comparable to the updated Spanish ACO recommendations that were applied in the current investigation. Based on the proposed classification, analysis of single-center COPD patients revealed variations in lung function, drug use, exacerbation, and baseline characteristics.

Patients with COPD and severe asthma were categorised in the current study using ACO traits. Similar to earlier data, group C (eosinophil count 300 cells/L and smoking 20 pack-years) made up the greatest percentage. Furthermore, the patients in Group C showed characteristics of both asthma and COPD, indicating that their phenotype was compatible with ACO. The distinctive inhaler use patterns in each group were an important finding of this study. Consistent with other research, the most popular medication combination overall was ICS+LABA, which was also utilised at varying rates by patients in each phenotypic group. Specialists recommended ICS+LABA alone or ICS+LABA +LAMA differently for the groups with a predominance of asthma and COPD. Investigating asthma-related characteristics for each ACO subtype, different proportions of features indicative of asthma were found for each type.

A key aspect of the current study is the multicenter, countrywide enrollment of ACO patients among a sizable population of asthma and COPD patients, enabling analysis based on sizable cohorts of patients with severe asthma and COPD. Additionally, both cohorts had high data dependability, minimal missing values, and were well-controlled. Our study produced informative data on the characteristics of various ACO phenotypic groups as well as useful information on the prevalence of ACO. For the effective care of specific patients, phenotype classification based on underlying illness physiology is crucial.

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