

PD0540 | Identification of asthma phenotypes in the US general population: A latent class analysis approach

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Background: Combining clinical and physiological data from adults with asthma by means of unsupervised classification methods could provide a better taxonomy among the general asthma population. Therefore, we aimed to identify distinct phenotypes using latent class analysis (LCA), in adults with current asthma from the general population.

Method: Adults participants (≥ 18 years) with current asthma (self-reported physician-diagnosed asthma + asthma attack or wheezing in the last year) from the US National Health and Nutrition Examination Surveys 2007-2012 were included (n = 1059). LCA was applied using 15 variables of asthma-related demographic, clinical and physiological domains (Table 1). LCA model was derived independently in the age groups <40 (n = 379) and ≥ 40 years old (n = 632).

Results: A two-class model was identified for both age groups. Class A <40 years (n = 285) and Class A ≥ 40 years (n = 462), were characterized by a predominance of highly symptomatic asthma with poor lung function and more emergency department visits because of asthma, compared to Class B <40 years (n = 94) and Class B ≥ 40 years (n = 170). Inflammatory biomarkers, smoking status, presence of obesity, early asthma onset and hay fever did not significantly differ between the classes.

Conclusion: Using an unsupervised classification analysis, two phenotypes were identified among adults with current asthma from the general population, differing on asthma-related symptoms and lung function. Further studies based on more comprehensive disease features are required to identify asthma phenotypes in population-based studies.