05.02 - Monitoring airway disease

20215
Epidemiology of lung function in a global severe asthma population
Adults, Severe asthma, Primary care


¹Division of Pulmonary, Critical Care, and Sleep Medicine, National Jewish Health - Denver, CO (USA), ²Division of Allergy and Clinical Immunology, National Jewish Health, - Denver, CO (USA), ³Personalized Medicine Asthma & Allergy Clinic, Humanitas University & Research Hospital - Milan (Italy), ⁴UK Severe Asthma Registry, Queen’s University Belfast - Belfast (United Kingdom), ⁵UK Severe Asthma Network and National Registry, Barts Health NHS Trust - London (United Kingdom), ⁶UK Severe Asthma Network and National Registry, Guy’s and St Thomas’ NHS Trust and Division of Asthma, Allergy & Lung Biology, King’s College London - London (United Kingdom), ⁷UK Severe Asthma Network, Royal Brompton & Harefield NHS Foundation Trust - London (United Kingdom), ⁸Division of Pulmonary, Allergy and Critical Care Medicine, Department of Respiratory Medicine, Royal College of Surgeons in Ireland - Dublin (Ireland), ⁹Royal College of Surgeons in Ireland, Clinical Research Centre, Smurfit Building Beaumont Hospital - Dublin (Ireland), ¹⁰Department of Internal Medicine, Seoul St Mary’s Hospital, College of Medicine, The Catholic University of Korea - Seoul (South Korea), ¹¹Department of Allergy and Clinical Immunology, ASAN Medical Centre, University of Ulsan College of Medicine - Seoul (South Korea), ¹²Optimum Patient Care - Cambridge (United Kingdom), ¹³AstraZeneca - Cambridge (United Kingdom), ¹⁴AstraZeneca - Gaithersburg, MD (USA)

ISAR (www.isaregistries.org) is the first global adult severe asthma registry.

We describe post-bronchodilator (post-BD) lung function of adult severe asthma patients for an initial set of 5 countries using a standardised severe asthma definition.

ISAR prospectively collects data on adult severe asthma patients (≥18 years), on GINA Step 5 treatment or uncontrolled on GINA Step 4 from secondary and tertiary care. Baseline aggregate lung function data (post-BD % predicted (pp) FEV₁ and FEV₁/FVC ratio) from the UK and patient-level data from the USA, Italy, South Korea and Ireland were collected from December 2014 to December 2018.

The post-BD ppFEV₁ of the cohort (n=2640; GINA 4=1767; GINA 5=873) did not differ by asthma severity (mean[sd] GINA 4=76%[15.4%]; GINA 5=74%[20.8%]). Based on available patient level data (n= 2092; GINA 4=1629; GINA 5=463), the post-BD FEV₁/FVC ratio had a normal distribution (shown in figure) with a mean of 0.71±0.11 and less than 0.7 for 42% of the patients. The mean pre- to post-BD change from predicted FEV₁ was <9% for both GINA 4 and 5 patients regardless of smoking history (GINA 4(Smoke)=6.9%[6.9%]; GINA 4(Non-smoke)=6.7%[7.8%]; GINA 5(Smoke)=7.6%[8.1%]; GINA 5 (Non-smoke)=7.0%[8.6%]).

Fixed airways obstruction is evident in severe asthma patients, with poor bronchodilator responsiveness regardless of smoking history or treatment on GINA Steps 4 or 5.

ISAR is co-funded by OPC Global and AstraZeneca.
Distribution of post-bronchodilator FEV₁/FVC ratio across GINA 4 and GINA 5 patients.

FEV₁/FVC Ratio (Post-Bronchodilator)

n=2092