

# Clinical, mechanistic and therapeutic topics and chronic airways disorders

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Welcome to this second issue of *Barcelona Respiratory Network Reviews* of 2018 that highlights five different contributions, a full 'four aces with a wild card', focused on clinical characteristics, mechanisms and/or therapy related to the two most prominent chronic obstructive airways disorders nowadays, this is to say bronchial asthma and chronic obstructive pulmonary disease (COPD) exclusively.

The issue starts with an inspiring article on the interplay between asthma and obesity in childhood and adolescence, a topic with serious epidemic implications. The complexity and multifactorial aspects of the obese asthma phenotype differs between childhood and adults, and most likely embraces several sub-phenotypes. The two writers, *Erick Forno* and *Juan C. Celedón* are from Pittsburgh, PA, one of the most salient clusters of worldwide respiratory research. The senior author, currently Secretary-Treasurer of the *American Thoracic Society (ATS)*, is a fiercely research scholar. The article reviews very thoroughly

the characteristics of epidemic obese asthma in children and young adults, as well as some of its underlying pathways. Above all, it addresses some key challenges in the research, diagnosis, and management fields of obese asthma in children. Although the authors acknowledge the markedly increase in recognition and understanding of obese asthma over recent years, they also regrettably admit that several challenges still remain to be solved.

The second review is a very comprehensive update on the role of biomarkers in COPD. *Ji-Yong Moon, Yu Ji Cho* and *Don D. Sin*, authors of this review are also part of another worldwide research excellence site in Vancouver, Canada, and the correspondent author, member of the *Global Initiative on Obstructive Lung Diseases (GOLD)* scientific committee, shares a mastery of research and academic skills in COPD. In the introduction, it is stated importantly upfront that there are no biomarkers of routine clinical use for the care of patients with COPD. After

defining biomarker as a “*characteristic that is objectively measured and evaluated as an indicator of normal biological processes, pathogenic processes, or pharmacologic responses to a therapeutic intervention*”, the review continues on the discovery and implementation of biomarkers. They acknowledge that this may help to enhance the precision of diagnosis, risks and severity assessment, therapeutic response, and predictive progression, and may overall facilitate personalised healthcare in COPD. This article represents a very extensive and updated summary of the recent advances of biomarkers in the context of COPD, including a very thorough discussion of their clinical implications.

The third review assesses the impact of pneumonia in patients with COPD, including epidemiology and associated risk factors, a dramatic clinical issue in respiratory medicine. The authors, *Marcos I. Restrepo, Oriol Sibila and Antonio Anzueto*, especially the last one, are internationally renowned academic experts from San Antonio, US, and Barcelona, Spain, who have in common their strong commitment in research projects involving lung infections and COPD. The clinical characteristics of COPD, potentially favourable to the development of pneumonia, are extensively addressed. Of note that the increased evidence that COPD patients treated with inhaled corticosteroids are at great risk to develop pneumonia is highlighted. Likewise, the available information as well as the possible mechanisms for these events is reviewed. Lastly, the role of influenza and pneumococcal vaccination in the prevention of pneumonia in COPD patients, a timely key topic, is discussed.

The fourth review is aimed to provide one of the most updated pieces of evidence on pharmacological therapies of asthma and COPD from the assessment of several current systematic reviews (SRs) of randomised controlled trials (RCTs). This review is written by *Gustavo J. Rodrigo* from Montevideo, Uruguay, an international expert in the use these methodological tools in chronic obstructive airways disorders. It is written that there is an important body of evidence supporting the clinical use of specific pharmacological treatments such as tiotropium, the first long-acting inhaled muscarinic antagonist (LAMA) introduced in the market and, omalizumab, the first biologic used in asthma. By contrast, in patients with stable moderate-to-very severe COPD, long-acting inhaled  $\beta_2$ -agonist (LABA)-LAMA and inhaled glucocorticosteroids (ICS)-LABA combinations can offer superior efficacy on important patient outcomes, *i.e.* lung function, dyspnea, health-related quality of life, and comparable safety to LAMA or ICS-LABA. The evidence that a substantial part of the analysed SRs remains uncertain or elusive constitutes a precise message and a wise clinical recommendation for both general practitioners and pneumologists.

The last, but not least, paper in this *BRN Rev* issue concentrates on tiotropium, the first effective LAMA introduced for the management of COPD treatment, both extending and complementing the former issue’s review. His author, *David Halpin*, from Devon, UK, member of the GOLD Board of Directors and of the Science Committee who was formerly the Chairman and Clinical Expert for the COPD Guideline Development Group of the *National Institute of Clinical Excellence*

(NICE), is a key solid opinion leader in the field of chronic obstructive airways diseases. Tiotropium, considered to be the flagship of LAMAs, has been shown to improve several PROs and reduce exacerbations in patients with COPD, and also to slow down disease progression in those with GOLD grade 2 disease. Moreover, it is the only LAMA that, in children, adolescents and adults with asthma ameliorates lung function and disease control when added to at least ICS therapy. In sum,

along with its proven safety, tiotropium is a very important and effective therapy for patients who suffer chronic obstructive airways diseases.

I hope that you will enjoy the reading of this issue in full!!!

