

Women, Small Airways, Lung Function, Imaging and Biologics, Related to Chronic Respiratory Problems ...and Good News for 2018

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The first issue of *Barcelona Research Network Reviews* for this very new 2018 year includes four articles that encompass inspiring current topics in respiratory medicine. Three are related to chronic obstructive airway diseases, *i.e.* chronic obstructive pulmonary disease (COPD) and bronchial asthma, and constitute the backbone of this issue, complemented by a fourth review on new insights into morbidly obese women, before and after the therapeutic indication of bariatric surgery.

The first review, by *Christine Jenkins*, an Australian worldwide expert in chronic obstructive airway diseases, addresses very comprehensively the influential role of sex in COPD. One of the strongest announcements of the author, '*...there are many differences between men and women in risk factor impact, symptom development, presentation, clinical manifestations and outcomes of COPD...*', wisely reflects her current thoughts, incidentally a differential feature not restricted to COPD alone. Women's greater risk of developing COPD at lower doses of tobacco and their continuing exposure to biomass cooking and heating fuels

over the world are serious factors that make it plausible that women will ultimately have a higher prevalence of COPD than men. Likewise, we are advised about the potential sex differences in regards with the therapeutic responses, not sufficiently investigated as yet. In closing, *C Jenkins* draws the attention to the fact that all research sex-related aspects of COPD may well represent a considerable unmet need in COPD.

The second contribution is a very thorough review of all lung function tests designed to assess the presence of small airways disease in bronchial asthma, written by *Federico Bellini*, *Luca Morandi*, and *Alberto Papi*, an Italian trio whose senior author is a very active international key opinion leader (KoL) in chronic obstructive airway diseases. Small airways disease (SAD)¹ was exhaustively investigated in the 1970s and 1980s, to be almost completely overlooked thereafter, as rightly pointed out by the authors. It is known that, irrespective of the severity of underlying airflow limitation, small airways are overall commonly affected in asthma. Moreover, small airways

disease seems to be conspicuously present in some specific phenotypes of asthma individuals and in severe asthma. Data from pharmacological studies indirectly support the hypothesis that several therapies targeting the distal airways can positively influence asthma clinical outcomes, particularly among patients with more pronounced small airway involvement, even though most of the findings have been collected in tiny, single-centre studies. However, large real-world studies appear to support the conclusions obtained under rigorous controlled conditions.

The third review refers to an even more challenging field: the future use of biologics in COPD, presented by two senior experienced scholars, *Ubaldo Martin*, American, and *Dave Singh*, British, an active KoL in the field of pharmacotherapy in COPD, member of the Global Initiative for Obstructive Lung Disease (GOLD)'s science committee. Although the existing therapeutic armamentarium for COPD can improve symptoms and patient-reported outcomes and prevent exacerbations, there is still an enormous unmet need for effective medications to target patients who continue to experience exacerbations despite current state-of-the-art treatments. Biologic therapies in COPD have been developed to target components of the innate immune response. Their limitations have led to alternative strategies with monoclonal antibodies, initially more successfully developed for asthma, that are now being developed for COPD, a potentially more effective target in a specific subset of COPD individuals, for instance those characterized by the co-existence of eosinophilic traits. This topic is timely and very innovative, and it is hoped to grow exponentially within the next years.

The final review concentrates on morbid obesity, namely an abnormal or excessive fat accumulation and body mass index (BMI). Nowadays, severe obesity represents an extremely serious public health problem with alarming prospects of a global prevalence of overweight and obesity, escalating up to 39% of the general population. Obesity is known to be a state of low-grade chronic systemic inflammation that induces a reduction of adiponectin production with inhibition of the vasorelaxant properties of perivascular adipose tissue with underlying widespread endothelial dysfunction. With this background in mind, the consequences of morbid obesity on pulmonary gas exchange, one of the relevant facets of abnormal lung function, and on lung imaging, including oxygen breathing- and postural-induced effects, before and after bariatric surgery, are provocatively addressed by an Spanish-American team composed by *Eva Rivas*, *José Venegas* and *Robert Rodriguez-Roisin*, the two last authors with a long-term experience in lung imaging and pulmonary gas exchange, respectively. Taken as a whole, the report is an enthralling story of lung function and imaging disturbances that reflect a complex framework of systemic and pulmonary inflammation in the morbidly obese, before and after bariatric surgery, the number one non-pharmacological approach for this serious problem.

Last but not least, *BRN Rev* proudly announces very good news for 2018. I am referring to the recent appointment of three new Associate Editors to confront the future challenges of the Journal. Needless to say that the incorporation of this new team of scholars will not only strongly support, but more importantly, improve the current editorial structure of

BRN Rev. Judith Garcia-Aymerich, an epidemiologist with an established research career in many facets of COPD, and María Molina Molina and Oriol Sibila, two clinicians with solid roots in the cellular and molecular networks of interstitial lung disorders and lung infections, respectively, compose this excellent trio of a new generation of chest physicians who are solidly building their reputation within

the active respiratory research cluster of Barcelona. We welcome them and appreciate their editorial commitment. And to the Reader, we wish Happy Holidays and a safe and prosperous New Year 2018!

REFERENCES

1. Hogg JC, MD, Hackett T-L. Small airways disease in chronic obstructive pulmonary disease: A 50 years history. *BRN Rev.* 2017;3:222-34.