



## Special article

# Report of the Barcelona Boston Lung Conference 2020

## Informe de la Barcelona-Boston Lung Conference 2020

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The 2020 Barcelona Boston Symposium held at the Paraninfo of the Universitat de Barcelona, supported by an unrestricted grant from the Menarini Foundation, provided the over 275 health care attendees a window of what is novel and important in the broad field of respiratory diseases. As has been customary since its inception, there was a blend of cutting-edge innovations and advances presented by 7 internationally recognized authorities in respiratory diseases, as well as the presentation of 18 original works by young investigators from across Spain and Mexico.

### Summary Report of Day 1. Friday 17th of January 2020

Particularly exciting and novel was the morning breakfast session with Alvar Agustí, Bartolomé Celli and Roberto Rodríguez Roisin, where 10 of the original works presented as posters, were discussed in a friendly and instructive atmosphere designed to provide feedback to young investigators, whose work may be helped by the experience of the three professors that shared brunch with them. The 2 and a half hours interaction covered material that span from infections of the lungs to the use of big data for the analysis of interaction between genes and environment in the pathobiology of lung dysfunction.

Following the interactive brunch, the full symposium began with a series of conferences by the invited professors. The first speaker, Professor Paul O'Byrne from Hamilton, Canada, provided a complete review of the data that supports the potential use of as-needed inhaled treatment with inhaled corticosteroids and long acting beta agonists (ICS/LABA) compared with the regular administration of the same medications in mild asthma. Importantly, Dr. O'Byrne has been a member of the Global Initiative for Asthma (GINA) and one of the main authors of most of the trials comparing the two approaches. His intervention summarized in this monograph was followed by an extensive interactive exchange with the

audience with the generalized conclusion that both approaches have merits and may not be exclusive of each other.

No less interesting because of its novelty was the second presentation; that of Dr. Noemi Reguart from Barcelona, Spain who dissected the role of immunotherapy in the treatment of cancer. Her talk provided not only an insight as to how cancer cells may block the natural surveillance role of immune cells in controlling abnormal cell line expansion (the nature of cancer), but also how novel agents that inhibit that block are altering the landscape of cancer treatment, by boosting the capacity of our own immune system to control abnormal cell growth. In a very elegant presentation, she centered her talk on the current application in lung cancer without forgetting to cover other areas where this therapy has already proven very effective such as melanomas. As was expected from its novelty, a long period of discussion responding to questions from the audience were well received and stimulating.

There were then 4 abstracts presentations from young investigators, they covered areas such as the course of lung function as it relates to phenotypes, the use of potential biomarkers and value of telomeres shortening as a marker of aging, all of them related to COPD. One of the abstracts also related early infancy body composition and ulterior lung function and asthma. A positive feedback from the chairmen and the audience should help presenters sharpen their research.

The third and final presentation of the first day was given by Prof Ian Pavord, from Oxford, England. An expert in inflammatory diseases of the airways, he covered an extremely frequent and puzzling subject, that of cough, centering his talk on its current causes and treatment. He highlighted the presence of specific phenotypes and clinical characteristics that help clinicians identify patients more or less likely to have the different diseases that may cause cough. He underlined the difficulty that sometimes accompanies this syndrome and placed special emphasis on the need to be thorough and inquisitive. Once more, the topic prompted multiple questions from the audience and a very informative exchange amongst attendees.

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## Summary report of Day 2, Saturday 18th of January 2020

The initial presentation of the morning covered an extremely interesting new field that is known as Radiomics, in essence, the integration of imaging with artificial intelligence. This difficult area was superbly covered by Dr. Marcelo Sanchez from Barcelona, Spain. The advent of computerized tomography for the everyday evaluation of patients with different diseases has provided the field of radiology the unique opportunity to integrate the large number of data points obtained in those studies with its unbiased analysis using algorithms derived by artificial intelligence. During his talk, he conveyed the concept that the diagnostic conclusions of AI algorithms for the diagnosis of cancer in images for lung nodules can be as precise, if not more precise than that of competent radiologists. However, he also brought home the point that the clinical applicability of these novel tools has yet to be proven. The large number of questions and the excitement of the audience were a testimony of the novelty and futuristic potential of this technique.

Following the topic of “Omics” Dr. Peter Sterk, from Amsterdam, The Netherlands introduced the topic of Breathomics, that is the analysis of exhaled breath to detect patterns of substances contained in the exhaled matter than can be markers of different pathologies. Whether using electronic “noses” with many sensitive sensors and supported by experience using laboratory models, the technique has now reached the field. Dr. Sterk presented data that showed a very high sensitivity and substantial specificity for the diagnosis of asthma and COPD. During the discussion period it was evident that Breathomics is a field with many supporters, that needs to be taken to the bedside to test its applicability.

The session continued with the presentation of 4 more young investigators. This morning the topics covered included the use of azithromycin in exacerbations of COPD, the immune profile of patients with lung cancer and two basic science presentations related to humanized models of pulmonary fibrosis and the role of satellite cells in the regeneration of skeletal muscles. Well presented and received, these abstracts provide evidence that the future is bright for pulmonary in the hands of these future leaders of academia.

The next international speaker was Professor Gerard Criner from Philadelphia, United States. Dr. Criner has been a pioneer in the use of bronchoscopically directed therapies for emphysema. His experience with relatively non-invasive techniques aimed at reducing the hyperinflated lungs of selected patients with COPD has resulted in the completion of several large, well-conducted trials with impressive benefits for these patients. Because of the benefit to risk ration, is research has resulted in the approval of the coverage for the uni-directional valves in patients who are candidate for this therapy. His masterful review of the data and of the practical implications of the procedure were complemented by the many questions that

followed the presentation. This will become a therapeutic option for many patients with advanced emphysema who continue to be very symptomatic in spite of maximal medical therapy.

The last presentation was no less innovative. It was given by Professor Mauricio Rojas from the University of Pittsburgh. He covered what is known about the use of Stem Cells in pulmonary diseases. During his broad review he presented optimistic results from experimental animal models, that have had less impressive results in the few clinical trials that have been completed in humans. Perhaps the results have been somewhat disappointing because the studies have lacked adequate patient selection and relatively difficult to obtain end-points. Interestingly he made a call to be careful with the many clinics where stem cell therapies are being offered, at exorbitant prices, with very little evidence of its benefit. His stimulating presentation led to heated discussions with the audience who loved Dr. Rojas knowledge and sincere responses to their questions.

## Concluding remarks

Once again, the themes, the presenters, the interactions amongst everyone attending, made this Barcelona Boston a unique experience for those involved. A summary of the presentations by the speakers is provided in this monograph. It has been our goal to bring to this symposium the most important advances in the broad field of respiratory diseases while attempting to stimulate young individuals to embrace their careers with devotion and passion. As organizers we want to thank Fundación Menarini and its personnel, for their support, the speakers for their superb work, the Universitat de Barcelona for providing the wonderful environment that enriches the symposium and Dr. Roberto Rodriguez Roisin for helping us interact with the young researchers. We believe, as shown by the summaries provided in this monograph, that the goal for this Barcelona Boston has been achieved. We look forward to 2021, where this symposium will again be the meeting everyone wants to attend.

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## Conflict of interest

Dr. Celli reports personal fees and other from Astra Zeneca and Menarini and personal fees from GlaxoSmithKline, Boehringer Ingelheim, Novartis and Sanofi Aventis.

Dr. Agustí reports personal fees from AstraZeneca and Chiesi and grants and personal fees from GSK and Menarini.