Research Group on Respiratory Diseases of North Barcelona

Ciber de Enfermedades Respiratorias - Ciberes

Eduard Monsó M.D. Ph., head

The Research Group on Respiratory Diseases of North Barcelona is part of Ciber de Enfermedades Respiratorias - Ciberes Network. Eduard Monsó M.D. Ph. D. is Head of the Research Group, which includes clinical and basic researchers based on the Respiratory Diseases Department of Corporació Sanitària Parc Taulí in Sabadell (Barcelona). The Group develops regular research activity on: a) Chronic Obstructive Pulmonary Disease (COPD); b) Pulmonary Fibrosis; c) Lung Cancer; d) Respiratory Infections; e) Asthma; f) Respiratory Sleep Disorders; and g) Technological Innovation. In these lines the Group maintains its research projects through funding from institutional agencies, scientific societies and foundations, and has generated a hundred publications in first quartile in the period 2014-17.
The research line on COPD is developed by 9 researchers from the Group, who act as coordinators of respiratory secretion analyses carried out in the framework of Ciberes multicentre cohort studies, where supervises the collection, quality control, processing and analyses of bronchial secretion samples. The Group focused this research on microbiology, local inflammatory responses, bronchial remodeling and specific immunity against respiratory pathogens, and in this line of research has shown that bronchial colonization is frequent in COPD and is associated with an identifiable local inflammatory response in respiratory secretions, which favors bronchial remodeling. The Group is a reference in the analysis of the respiratory microbiome, and in this field works in collaboration with researchers from the CIBER of Epidemiology and Public Health (CIBERESP), the Foundation for the Promotion of Sanitary and Biomedical Research of the Valencian Community (FISABIO) and the Center for Genomic Regulation (CRG) in Barcelona. The Group has organized the international workshop "The microbiome in Respiratory Medicine - Current Challenges and Perspectives", organized by the European Respiratory Society, where research priorities in this field has been underlined, and specified in a review article recently published in the European Respiratory Journal (PMID 28404649).

In its research on the respiratory microbiome the Group has identified the spectrum of bacteria present in bronchial secretions in COPD and asthma, and has analyzed the differences in respiratory bacterial composition in function of the pulmonary territory and the severity of the disease. The Group has recently confirmed that exacerbations in patients with chronic colonization are due to pathogens other than those who act as colonizers, and has obtained funding for the currently ongoing coordinated research project "The microbiome respiratory in the COPD", funded by the Instituto de Salud Carlos IIII (PI15/00167), in which the Group acts as coordinator, whose objective is to examine the relationships between pulmonary and intestinal microbiomes,

inflammation and remodeling in COPD, using systems biology. More recently the Group has included the viruses and fungi in the analysis of the respiratory microbiome, and the analysis of the relationships between these microorganisms, inflammation and remodeling. Researchers from the Group are participating in the creation of a cohort of fragile COPD patients, funded by the the Instituto de Salud Carlos IIII (PI16/00977), where the effects of the use of macrolides as preventive treatment of exacerbations in severe COPD will be assessed.

Main publications on respiratory microbiology and microbiome (IF>3 / last 5 years)

1- Microbiome diversity in the bronchial tract of patients with chronic obstructive pulmonary disease. J Clin Microbiol 2012; 50:3562-8. IF: 4.068.

2- Specific IgA and metalloproteinase activity in bronchial secretions from stable chronic obstructive pulmonary disease patients colonized by Haemophilus influenzae. Respir Res 2012;13:113. IF: 3.642.

3- Effects of immunocompromise and comorbidities on pneumococcal serotypes causing invasive respiratory infection in adults: implications for vaccine strategies. Clin Infect Dis 2013; 57:1722-30. IF: 9.416.

4- Severity-related changes of the bronchial microbiome in COPD. J Clin Microbiol 2014; 52:4217-23. IF: 4.232.

5- Personalized Respiratory Medicine: Exploring the Horizon, Addressing the Issues. Am J Respir Crit Care Med 2015; 191:391-401. IF: 12.996.

6- Effect of Incidental Consolidation on Management and Outcomes in COPD Exacerbations: Data from the European COPD Audit. PLoS One 2015;10:e0134004. IF: 3.234.

7- Glucocorticoids and antibiotics, how do they get together?. EMBO Mol Med 2015 Jun 15;7(8):992-3.IF: 8,665.

8- Functional Metagenomics of the Bronchial Microbiome in COPD. PLoS One 2015; 10:e0144448. IF: 3.234.

9- C-reactive protein in outpatients with acute exacerbation of COPD: its relationship with microbial etiology and severity. Int J Chron Obstruct Pulmon Dis 2016;11:2633-2640. IF: 3.157.

10- The microbiome in respiratory medicine: current challenges and future perspectives. Eur Respir J 2017; 49: pii 1602086. IF: 10.569.

11- Bronchial microbiome, PA biofilm-forming capacity and exacerbation in severe COPD patients colonized by P. aeruginosa. Future Microbiol 2017; 12:379-392. IF: 3.374.

12- Specific IgA against Pseudomonas aeruginosa in severe COPD. Int J Chron Obstruct Pulmon Dis 2017;12:2807-2811. IF: 3.157.

13- Multi-level differential network analysis of COPD exacerbations. Eur Respir J 2017; 50: pii: 1700075. IF: 10.569.

14- Effect of a rehabilitation-based chronic disease management program targeting severe COPD exacerbations on readmission patterns. Int J Chron Obstruct Pulmon Dis 2017;12:2531-2538. IF: 3.157.

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Internationalization Platform

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