



¹Secretary of Assembly 5, European Respiratory Society.

²University of Insubria, Varese, Italy.

³Istituti Clinici Scientifici Maugeri, IRCCS Tradate, Italy.

Assembly 5: airway diseases

Meet the Assemblies

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Assembly 5 brings together numerous specialists in the field of chronic airway diseases. Not only clinicians, researchers and therapists, but also students interested in asthma, chronic obstructive pulmonary disease (COPD) and cough. These are diseases with high and rising prevalence despite the availability of good therapeutic interventions. They have high associated morbidity, mortality and socioeconomic costs. The Assembly now has more than 1000 members, active in three main groups: 5.1) airway pharmacology and treatment, with the aim to discover new drugs for asthma, COPD and cough, and to translate the results of basic science into clinical development; 5.2) monitoring airway diseases, with the aim to evaluate new methodologies, biomarkers and parameters useful to monitor airway diseases; and 5.3) allergy and immunology, with the aim to study mechanisms at the basis of asthma and COPD. The expertise gathered in this Assembly favours the interaction between basic and clinical studies, offering new opportunities to improve diagnostic processes and personalised therapies. The concept of stratified or personalised medicine in airway disease has been driven by members of Assembly 5 and is an increasing priority amongst all groups.

research focus. Most airway and lung diseases are not cured, and treatment is often through pharmacological agents. The airway pharmacology and treatment group focuses on the pharmacology of drugs used in asthma and COPD therapy, and the development of the scientific rationale for the development of novel drugs. Therefore, it covers all aspects of drug development from basic science through animal models to phase 1–3 clinical trials. This area has involved collaboration between clinicians, pharmacologists and more recently, molecular biologists and biochemists. There is interest in bronchodilator drugs, therapies targeting cough, anti-inflammatory therapies, and therapies aimed at tissue remodelling, including fibrosis, in chronic lung disease. In all these areas, the investigation of the correlation between the pulmonary pharmacokinetics and pharmacodynamics is essential. In this respect, the group has a strong interest in studies on drug deposition and delivery through (innovative) delivery devices. Moreover, cooperation with experts in infectious diseases exists due to increasing use of antibiotics for lung disease.

5.1) Airway pharmacology and treatment

The airway pharmacology and treatment group has over 450 members and has a truly translational

5.2) Monitoring airway disease

The monitoring airway disease group currently has more than 150 members. Its mission is the progression and dissemination of knowledge



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on monitoring strategies in all forms of airway diseases. Airway monitoring is today one of the pillars of respiratory medicine across Europe, not only from the standpoint of diagnosis, but also from a therapeutic perspective, by contributing to the identification of novel potential therapeutic targets. The group aims to achieve a double impact on the practice of pulmonology. On one hand, it contributes to medical practice, improving the health of our patients by pursuing strategies to categorise patients, according to noninvasive and minimally invasive measurements. This will eventually lead to a more personalised diagnosis and treatment of airway disease, extending from the specialist clinic to the point of care. On the other hand, the group has a research mission that is aimed towards novel biomarker determination and assessment across the whole range of development, from pre-clinical to clinical validation, in stable disease and during exacerbations. As a consequence, the group provides a growing number of ERS International Congress presentations, similar in number to other, bigger groups in the Society. Attainment of these two objectives, healthcare and research, will only be possible through the participation of the group members. It is the active participation in discussion forums and research projects of its members that contributes to improved respiratory health across Europe.

5.3) Allergy and immunology

The innate and adaptive immune systems have essential roles in the homeostasis of airway and pulmonary functioning, and are crucial in the defence against invasive microorganisms. Chronic and allergic immune reactions play a role in several airway diseases, including, but not limited to, asthma, COPD and infectious airway diseases.

The activities of the group are focused on inflammatory/immune reactions in relation to airway diseases. The members, currently numbering over 450, are involved in studies investigating the function and regulation of cells of the immune system, including pulmonary macrophages, eosinophils, neutrophils, mast cells and lymphocytes, but also constitutive airway cells, such as epithelial cells, smooth muscle cells and fibroblasts. The activities of the members range from basic science to clinical practice, with a strong translational profile. Deemed to be of particular

importance is teasing out the different clinical phenotypes of airway diseases and relating them to inflammatory/immune characteristics leading to better personalised treatment approaches.

The ultimate goal is to acquire a deep understanding of the underlying immunopathological mechanisms involved in airway diseases, which will contribute to the development of novel therapeutic approaches to their management and treatment. A realistic goal is the development of new biology-based therapies, some of which are currently being introduced in respiratory medicine, with many more to follow.

To achieve these goals, the group cooperates closely with several other groups and Assemblies, and our members participate in various ERS task forces and research seminars. Our group organises many sessions (oral presentations, poster discussions and thematic posters) during the ERS International Congress, on the basis of submitted abstracts. We hope that many new members will join us and we look forward to your proposals for symposia, task forces and research seminars.

The future

Our Assembly gathers those with many interests in the field of airway diseases, and discusses the results of recent new technological implementations in the field of biomarkers, molecular allergology and immunological mechanisms. Many studies have focused on COPD and asthma monitoring, while severe asthma and COPD subtypes are of particular interest in relation to their immunological and pathophysiological mechanisms, which will lead to new therapeutic strategies. Big Data is an increasingly important aspect of lung disease, and the Assembly will continue to pioneer the involvement of bioinformaticians, mathematicians, biologists and clinicians in understanding complex diseases and deriving biomarkers to aid in their clinical assessment. We look forward to increasing our Assembly membership with young, engaged members who will join in our aim to create a network of researchers among the three groups and among members of other Assemblies that will successfully expand the aims of Assembly 5. We hope to increase the opportunity to engage people in educational workshops to share the expertise of the Assembly members with all researchers and clinicians interested in this field.