Introduction

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Severe asthma has now been recognised as a distinct form of asthma that responds poorly to currently available medications; it is the asthma group with the greatest unmet need. Although the definition of severe asthma remains a pragmatic one, under this umbrella definition, there exist different phenotypes that can be distinguished on clinical presentation and natural history, and on certain biomarker features. In the last 10 years, substantial progress has been made in terms of understanding some of the mechanisms that drive severe asthma and with it, there has been the introduction of novel targeted therapies (particularly in the form of monoclonal antibodies that target components of the type 2 pathway) which are bringing therapeutic relief to a high number of patients with severe asthma.

In the introduction to the *ERS Monograph* on Difficult-to-Treat Severe Asthma published 8 years ago, the editors pondered the most pertinent information that had emerged in the 10 years prior to the book's publication, reflecting that: "the disease is heterogeneous, and the challenge for the next 10 years would be to understand the different types of severe asthma" [1]. In 2019, we can say that there have been significant advances in our understanding of the heterogeneous nature of severe asthma, such that new targeted treatments have been introduced for a particular phenotype of severe asthma: eosinophilic severe asthma. These advances have been made possible following the consensus agreement in 2014 on a definition of severe asthma that offers a pragmatic, bedside characterisation [2]. This basic stepping stone subsequently led to the description of clustering approaches that defined several clinical phenotypes from asthma cohorts around the world. More recently, a greater understanding of the mechanistic heterogeneity has been achieved through a precision medicine approach, with findings that have yet to be applied to the clinical problem.

This *Monograph* is comprehensive in its coverage of all aspects of severe asthma, including its definition, evaluation, epidemiology, diagnosis, pathology, treatable traits, clinical and molecular phenotypes, mechanisms, treatment and management. It captures the progress

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that has been made in the past decade with particular focus on our recent understanding of the mechanistic heterogeneity, using analysis of various 'omics platforms and analytical methods applied to well-defined asthma cohorts. How these advances have led to improved management targets is emphasised. The final chapter of the *Monograph* looks to the future, providing a summary of what we might be expecting to occur in the next decade of severe asthma. We are of the opinion that the advances made in the next decade will result in better targeted treatments for selected groups and may pinpoint the actual causes of severity of asthma. Finally, several clinical cases of severe asthma are presented to obtain an appreciation of the clinical spectrum of the problem.

This book brings together the clinical and scientific expertise of those currently working to solve the problem of severe asthma, with chapters written by experts from around the world to ensure a truly international spirit of collaboration. It should appeal to those involved in the management of severe asthma patients, as well as to those seeking to improve quality of life and to those aiming find ways of controlling this chronic disease.

We would like to thank all of the authors of this *Monograph* for dedicating part of their busy schedule to writing these chapters. Severe asthma can have such a tremendous impact on the lives of patients. We would therefore like to dedicate this book to our patients, who have helped us focus on their greatest unmet need: to find new ways to control asthma. We hope that this *Monograph* will provide some hope for the future.

References

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