REVIEW SERIES

Chronic obstructive pulmonary disease • Introduction

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A series of review articles on chronic obstructive pulmonary disease beginning in this issue of *Thorax* will consider many of the basic science and clinical aspects and provide the clinical scientist and practising physician with an up to date understanding of this common and distressing lung disease.

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Chronic obstructive pulmonary disease (COPD) is defined as airflow obstruction that does not change appreciably over a period of several months. It is a syndrome composed of chronic bronchitis, small airways disease (bronchiolitis), and emphysema that vary in proportion between affected individuals. COPD is a major cause of global morbidity and mortality that affected 44 million people in 1990. Indeed, almost three million people died from this condition in 2000. It is becoming more prevalent among western women and is set to increase substantially with the export of tobacco to developing countries such as India, Mexico, Cuba, Egypt, South Africa, and China.[1]

Despite being such a major health concern, only limited therapeutic options are available with most of the medications having been developed for the treatment of asthma. The successful development of new drugs for COPD will require a better understanding of the epidemiology, natural history, genetic, and environmental risk factors and pathophysiology of the disease. In this series we have invited reviews on many of the basic science and clinical aspects of COPD. In particular, we review the gene–environment interaction that renders some smokers susceptible to COPD, the biochemical and pathological processes that cause airflow obstruction, the metabolic consequences of COPD, and the recent development of animal models that have provided new insights into the pathogenesis of emphysema. A better understanding of the basic mechanisms is central to the development of novel therapeutic strategies, but these may take many years to impact on clinical practice. We have therefore also invited reviews on the current management of COPD: imaging of emphysema, the management of acute exacerbations and stable airflow obstruction, pulmonary rehabilitation and strategies for smoking cessation, the indications for surgical intervention and nasal ventilation, and the assessment of fitness to fly. The review series concludes with the prospect of new therapeutic interventions based on our current understanding of the pathophysiology of COPD.

Taken together, this comprehensive review series will provide the clinical scientist and practising physician with an up to date understanding of this all too common and distressing lung disease.

REFERENCE

1 **Peto R**, Chen Z-M, Boreham J. Tobacco: the growing epidemic. *Nature Med* 1999;**5**:15–17.