

COPD, Part 1

Breathing new life into old thinking



Dr Robert D. Levy



Dr Don D. Sin

Until just a few short years ago, chronic obstructive pulmonary disease (COPD) was considered an untreatable respiratory condition resulting in breathlessness and impaired functional capacity. The only treatment options generally available and regularly promoted included short-acting bronchodilators for relief of dyspnea, and—for hypoxemic patients with a view to mitigating cor pulmonale and hopefully improving survival—supplemental domiciliary oxygen. Much attention was paid to the clinical distinction between chronic bronchitis (a clinical condition) and emphysema (a morphologic abnormality), although the therapeutic implications of this distinction remained somewhat elusive. Similarly, medical trainees were coached in the subtle physiologic relevance of separating the “blue bloaters” from the “pink puffers,” although once again the differentiation between these phenotypes was of questionable clinical value. One commonly heard of patients being described as having “end-stage lung disease,” the implication of course being that we had no tools of therapeutic value for those with advanced COPD.

This nihilistic view of COPD needs to be reexamined. A substantial

body of evidence has grown over the past two decades, resulting in a revolution in our understanding of the pathophysiology and management of COPD. In fact, a more contemporary view of the condition paints a very different picture of COPD as “a preventable and treatable disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and is associated with an abnormal inflammatory response of the lungs to noxious particles or gases, primarily caused by cigarette smoking. Although COPD affects the lungs, it also produces significant systemic consequences.”¹ “Preventable,” “treatable,” “inflammatory,” and “systemic” were not words generally associated with COPD a short while back!

COPD is a major public health problem. It is the fourth leading cause of chronic morbidity and mortality and is projected to rank fifth by 2020 as a worldwide burden of disease.^{2,3} Yet COPD fails to receive adequate attention from the health care community as well as from health policy decision-makers.

The goal of this and the next issue of the *BCMJ* is to share contemporary concepts regarding the pathophysiology, epidemiology, and management of COPD with the BC health care

community. British Columbia is a hotbed of research into the basic mechanisms at play in the development and progression of COPD. Furthermore, the BC health care community is taking a leadership role in the development of interdisciplinary chronic disease management strategies for the care of those suffering from the condition.

Chronic obstructive pulmonary disease is a major health burden in British Columbia and throughout the world. As pointed out by Ms Camp and Dr Levy (page 80), in BC alone, over 70 000 residents over the age of 45 years have COPD. COPD accounts for nearly 10 000 hospitalizations each year in BC, making it the *leading cause* of hospital admissions (through emergency rooms). COPD is an epidemic not just in this province but also in the rest of Canada and the world. COPD is responsible for 120 000 deaths each year in Canada and 3 million deaths worldwide. The mortality rate is expected to increase by at least 50% over the next 20 years.

Traditionally, clinicians and patients have had a fatalistic attitude toward COPD, believing it to be an untreatable condition—and to a large extent this was indeed true. However, research and clinical innovations over the past two decades have made COPD a very treatable condition. As summarized by Dr Sin (see page 85), there are now several drugs that can be used to control patient symptoms and to reduce their risk of exacerbations (e.g., long-acting bronchodilators, inhaled corticosteroids, combination products). As pointed out by Drs Al Talag and Road (see page 90), nonpharmacologic treatments such as smoking cessation, vaccinations, pulmonary rehabilitation, and regular exercise programs are critically important in improving the health and well-being of patients with COPD.



The final article in this first part, by Drs Al Talag and Wilcox (see page 97), outlines the laboratory measurements that are applied to COPD. Spirometry and oximetry have the broadest application, and a framework for the application of these tests is provided.

In the April issue of the *BCMJ* you can expect articles on exacerbations, multidisciplinary treatment, evaluating comorbidities, perioperative complications, and end-of-life care.

—**Robert D. Levy, MD, FRCPC**
Professor of Medicine,
University of British Columbia;
Respiratory Division,
St. Paul's Hospital
—**Don D. Sin, MD, MPH, FRCPC**
Associate Professor of Medicine,
UBC; Respiratory Division,
St. Paul's Hospital

References

1. Celli BR, MacNee W. Standards for the diagnosis and treatment of patients with COPD: a summary of the ATS/ERS position paper. *Eur Resp J* 2004;23:932-946.
2. Murray CJL, Lopez AD. Evidence-based health policy—lessons from the global burden of disease study. *Science* 1996;274:740-743.
3. World health report. Geneva: World Health Organization, 2000. www.who.int/whr/2000/en/statistics.htm (accessed 8 January 2008). **BCMJ**