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ASIA EDITION

# COPD in Asia is a gathering storm

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Predictions for the burden and impact of Chronic Obstructive Pulmonary Disease (COPD) have exceeded all expectations. In 1996, the World Health Organization (WHO) estimated that COPD would rise from seventh leading cause of death and disability worldwide to fifth position by 2020. COPD has achieved the ranking seven years ahead of schedule. Currently, the revised prediction is for COPD to achieve third place as cause of death by 2020. When Dr P M A Calverley and Dr P Walker, from Department of Medicine, University of Liverpool, UK , correctly predicted the rise in COPD that was about to occur, they made no distinction between Asian countries and those of Europe and the US. It is now apparent that much of the burden will be felt in Asia, yet despite high rates of cigarette smoking and use of biomass fuels, there are few objective data on the prevalence of COPD in the region. This paper addresses the level of appreciation of the severity of COPD in Asia, regional COPD management initiatives and what Asia-specific actions might be appropriate in reducing the main risk factors.

**How well is COPD understood?**

The term COPD was first used in 1965 and has overtaken other descriptive labels such as chronic bronchitis and emphysema, to become the preferred name for this disease. COPD is characterized by low airflow on lung function and shortness of breath, both of which are poorly reversible and gradually get worse over time.

There is scant appreciation of the size of the global problem, in part because COPD is not diagnosed in its early stages, especially in Asia. Chronic cough is frequently attributed to an innocent accompaniment of smoking or simply to a manifestation of aging. COPD has become a blanket term to describe bronchiectasis, chronic asthma, chronic tuberculosis and bronchiolitis obliterans, rather than a disease entity in its own right. In fairness, the term COPD was only introduced officially in some Asian countries as recently as 1995.

While the term COPD is relatively new, the disease is not. Classical descriptions of 'voluminous lungs', 'distended air sacks' , cough, mucous and 'catarrh' date back many centuries, and as early as 1814, the condition was recognized as a disabling disorder.

Dr Sonia Buist, one of the most respected pulmonary researchers in the world, believes that "COPD doesn't get much sympathy or a lot of research funding", largely because as a smoker's problem, it is considered to be "self-inflicted". She studied more than 9,000 people aged over 40 from 12 different countries. Her conclusions were that COPD is the cumulative response of the lungs to the burden of all that is breathed over a lifetime and that COPD varied in prevalence throughout the world. While the overall prevalence was 10.10 percent, the highest prevalence was 22.20 percent in men in Cape Town, South Africa and the lowest being in Hanover, Germany with only 3.70 percent in women. Asian countries were not mentioned. It is to say the least, interesting, to note progress in the global Burden of Obstructive Lung Disease Initiative (BOLD), which is collecting country-specific data on the prevalence, risk factors and social and economic burden of chronic obstructive pulmonary disease. To date, of the 21 sites completed, Asia is represented only by India and the Philippines. Of the 20 sites currently in progress, only Mysore in India and Penang in Malaysia are involved. Clearly Asia has been underrepresented in these important studies.

Recently the Canadian Lung Association along with medical expertise from the Canadian Thoracic Society issued a National Report Card on Chronic Obstructive Pulmonary Disease. The key findings were that there was an alarming increase in mortality and a shockingly low level of awareness. There was a clear deficiency in the way COPD was being managed and while 98 percent of Canadians had awareness of breast cancer, HIV/AIDS and Alzheimer's Disease, only 17 percent had any awareness of COPD.
A regional COPD working group recently tried to estimate the COPD prevalence in 12 Asia-Pacific countries. They concluded that the total number of moderate to severe COPD cases in this region was 56.60 million, assuming the modest prevalence rate of 6.30 percent. Given that the overall worldwide prevalence is thought to be in the 10 percent range, it seems reasonable to speculate that the number of cases of moderate to severe COPD in Asia is, in fact, closer to 100 million.

If level of awareness of COPD in a developed country such as Canada is as low as 17 percent, the awareness levels in the developing markets of Asia are likely to be far worse; surely a suitable issue to be explored in an Asia-specific epidemiological research study in the future. Such a study will possibly be complex: in the developing countries within Asia, the prevalence of tuberculosis is high, so that it is likely that smokers with chronic cough might well have complex lung pathology with co-morbidities. Such patients, if fortunate enough to be correctly diagnosed and treated are of course ineligible for either inhaled or systemic corticosteroids or to be recruited in clinical trials of immune modulating new therapies for COPD.
Attempting to glean Asia-specific information from the Global Initiative for Chronic Lung Disease is challenging as most of the available conclusions come from industrially developed countries. In Asia, with its well recognized ethnic, economic, educational and social diversity, there is a lack of consistency even in the definition of COPD. Hence, attempting to evaluate COPD epidemiology across Asia, using medical records and death certificates makes for scant and unreliable data. Suffice to say, any available prevalence and morbidity data on COPD in Asia are likely to underestimate the total burden. As smoking is the main factor responsible for the development of COPD, and as smoking prevalence is highest in the Western Pacific and China, which is still increasing, the rise in COPD within Asia will undoubtedly be dramatic. One would hope that in the near future, we will have the opportunity to contribute to, and eventually see, an increase in public awareness and educational initiatives about COPD risks in Asia.

**COPD management in Asia**

The good news about COPD is that it is both preventable and treatable. Furthermore, the Clinical Practice Guidelines are well established and readily available from the Global Initiative for Chronic Lung Disease (GOLD). The bad news is that of the approximately 25 countries that comprise the Asia-Pacific, it is extremely difficult to evaluate the level of compliance with the GOLD guidelines or whether the recommended medicines are available. While there may be cultural differences in medical practice across Asia, the major problems in following the guidelines are resource conflicts and lack of organizational support. In addition, even in the most developed countries, where beta-agonists, anticolinergics, corticosteroids, antibiotics and phosphodiesterase inhibitors are both available and used in compliance with the guidelines, none have been shown to decrease mortality. To date, the only proven strategies to reduce mortality in COPD are smoking cessation and continuous, supplemental oxygen therapy.

In the UK, for example, the Department of Health has made the identification, diagnosis and care of people with COPD as a priority for the National Health Service. No such initiative exists across the Asian continent, yet COPD is clearly a major health concern in the developing countries with mortality rates higher than in the US and Europe. The WHO estimates that

the mortality rate is at least 40 per 100,000 population for South East Asia and 79.80 per 100,000 population in the Western Pacific Region, which includes China.

The cost of health care resources and consequences of disability from COPD in the US are estimated to be $1522 per patient, per year and in the UK, medical costs were almost $2000 per year as long ago as 1998. No such data are available for the developing countries in Asia, yet it is well recognized that the burden of COPD in Asia is far greater than in the developed Western countries. The burden that Asia is facing includes total number of deaths, years of lives lost and time spent living with disability.

**The way out**

As in the Canadian 'Call to Action,' Asia also needs a multifaceted approach in improving awareness of prevalence and disease burden18,19. As Dr S K Jindal, head of the department of Pulmonary Medicine, Postgraduate Institute of Medical Education & Research, India, has indicated in India, tackling the unrecognized epidemic of COPD in the region requires huge economic, administrative and social inputs. We need to implement public awareness and educational initiatives about COPD. We need to expand training of physicians for better awareness of guidelines and lung function testing. Last, but not least, we must encourage funding of smoking cessation programs.

**Conclusions**

The growing health care concern regarding death and disability from COPD will continue to affect Asia more than anywhere else in the world. For too long, the impact of COPD has been under-estimated due to lack of epidemiological data, misdiagnosis of lung disease, and inaccurate reporting of deaths. The mortality and morbidity burden of COPD is set to continue, particularly in Asia. The region is facing significant financial cost and lost productivity from COPD.

The priority is to improve treatment of COPD and to intervene in such a way as to increase survival. Improved treatment will emerge from ongoing and future clinical trials, for which Asian based research organizations are ideally placed. Increased survival however, will come from smoking cessation, the single most effective intervention.