



# Reducing chronic obstructive pulmonary disease mortality in Korea: early diagnosis matters

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The prevalence of chronic obstructive pulmonary disease (COPD) in Korea between 2007 and 2015 was about 13% [1], and the total economic costs attributable to COPD were estimated to be approximately 1,245 million USD (1,408 billion KRW) in 2013 [2]. COPD was the third leading cause of death in 2016 worldwide, claiming 3 million lives [3], and ranked 8th in causes of death in Korea in 2018 [4]. However, there have been no Korean studies of mortality rate or causes of death in patients with COPD.

In the current issue of the *Korean Journal of Internal Medicine*, Park et al. [5], using the National Health Insurance Service-National Sample Cohort (NHIS-NSC) database, report the 5-year mortality rate of newly diagnosed COPD to be 25.4%, and the most common cause of death to be chronic lower respiratory disease. This study makes us reconsider the situation of under-diagnosis and under-treatment of COPD, and provides new data on COPD mortality.

The 5-year mortality rate reported in that study differs from that of previous studies. The Lung Health Study (LHS), which enrolled patients with milder COPD, reported a 5-year mortality rate of 2.5% [6]. The 3-year mortality rates reported from the Towards a Revolu-

tion in COPD Health (TORCH) study were 13% to 16%, depending on the severity of air-flow limitation [7]. In a Danish population-based cohort study, the 3-year mortality rate was 10.0% in GOLD A and 36.9% in GOLD D [8]. This difference may reflect the fact that Korean COPD patients have more severe disease. It is well known that respiratory failure becomes the predominant cause of death in more advanced COPD patients [9]. This study also showed that only 1.5% of subjects were treated for COPD during the 12-year follow-up period. These results reflect a current situation of under-diagnosis and under-treatment of COPD in Korea.

In addition, the proportion of male patients in this study was lower than that of other cohort or epidemiological studies in Korea [10,11]. As the prevalence of COPD is higher than that of the general population among male ever-smokers [12], the issue of under-diagnosis and under-treatment of COPD is more severe for male patients.

As there is currently no medical treatment to reduce mortality from COPD [13], early detection and introduction of smoking cessation and COPD education could be an initial step to improve survival in patients with COPD [14]. The Korean Academy of Tuberculosis and Respiratory Diseases has developed Korean COPD guidelines [13], and has distributed various educational materials

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to improve the diagnosis and treatment of COPD. Additionally, a quality assessment program of COPD management has been conducted since 2014 by the Health Insurance Review and Assessment (HIRA) Service, to improve the quality COPD management [15]. Unfortunately, rates of diagnosis, treatment, and awareness of COPD are still very low [1,15], despite these efforts. Therefore, many COPD patients in Korea are not receiving adequate treatment.

COPD is now considered to be caused not only by exposure to smoking or air pollution in adult life but also by poor lung growth as a result of malnutrition, infections, and/or passive exposure to pollutants [16]. For this reason, the role of government is important to address the current situation [16,17]. For example, a national, active care-finding strategy for subjects at high risk for COPD is one potential approach for government to consider, as with the National Lung Cancer Screening Program [18]. It should be kept in mind that COPD is a preventable and treatable disease [13].

### Conflict of interest

No potential conflict of interest relevant to this article was reported.

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