

Re: Prevalence of chronic obstructive pulmonary disease among smokers attending primary health-care clinics in Saudi Arabia

To the Editor: We read with great interest the article published in the March-April issue of the *Annals of Saudi Medicine* on the prevalence of chronic obstructive pulmonary disease (COPD) among smokers.¹ We would like to raise several scientific and public interest issues related to the article.

COPD is defined in the Methods section as airway obstruction with a smoking history of 5 years or more. They attribute the definition to the Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2009. GOLD 2009 did not specify the duration of smoking but some earlier guidelines considered 10 years as a minimum risk. We now know, from computerized CT scan scoring, that emphysema and obstructive chronic bronchitis do not develop

without a long history of smoking. This concurs with a recent study from Saudi Arabia—using CT scan and bronchial biopsy—which found that all patients with less than 20 pack-years smoking history had irreversible asthma and not COPD.² Unless those patients had heavy occupational exposure like wood burning or digging wells, smoking for 5 years does not produce COPD.

Implicit in the definition of any disease is the exclusion of other conditions with similar manifestations. GOLD explicitly says that COPD is defined by emphysema/chronic bronchitis and that irreversible asthma and bronchiectasis have to be ruled out. Lack of “history of asthma or atopy” used by the article does not rule out irreversible asthma. Some of the simpler differentiating points listed by GOLD to diagnose asthma are: freedom from symptoms between attacks, large reversibility of FEV1, younger age of onset, and manifestations of atopy. In particular, hypertrophy of the nasal turbinates has been reported consistently to be 80% to 90% in asthma compared with 15% to 20% in COPD. None of the GOLD criteria for COPD were mentioned in the article.

The greatest evolution in the understanding of COPD in the last 15 years is the universal acceptance of COPD phenotypes. The following have been used for phenotyping: sputum cytology, fiberoptic bronchial biopsy, carbon monoxide diffusion studies, long-term reversibility tests (single reversibility is unreliable),³ lung compliance, computerized scores of CT scan, and visual assessment of CT scans and other means to differentiate COPD into three major phenotypes: irreversible asthma (A), mixed bronchitis-emphysema COPD (M), and emphysema-dominant COPD (E). The differentiation is not an idle intellectual

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exercise, but has serious therapeutic implications. A, M and E phenotypes display different responses to inhaled bronchodilators.^{4,5}

Various studies have concluded that 20% to 40% of "COPD" patients suffer from irreversible asthma.^{2,6,7} In addition, even in Western countries, bronchiectasis is present in over 10% as an alternative or concomitant diagnosis to COPD.^{8,9} Many studies in the last few years use terms like "persistent airflow obstruction" or "airway obstruction" or "limitation" to describe undifferentiated airway obstruction.¹⁰

The article enforces the message that COPD is one entity and, inadvertently, introduces a new serious precedent: 16% of "COPD" patients smoked for less than 10 years and another 42% less than 20 years. Even at such low levels of smoking a diagnosis of asthma is not a consideration in the article. Adopting this concept would increase expenditures, as COPD is treated with more expensive and numerous inhalers than asthma. Equally importantly, underrecognizing asthma would deny patients specific asthma drugs like anti-IgE therapy (omalizumab) or large doses of inhaled corticosteroids. A total of 1380 patients were screened out of whom 879 were excluded due to "poor performance of spirometry or incomplete data". This raises doubts about whether the spirometry was done according to standards. Also, the total number diagnosed as "COPD" was only 71 from 60 primary care centers in three regions of Saudi Arabia. Because of lack of power in terms of numbers or stratification, such findings cannot describe the prevalence in health care clinics in Saudi Arabia.

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