



available at www.sciencedirect.com



journal homepage: www.elsevier.com/locate/rmed



SHORT COMMUNICATION

Non-reversible airway obstruction in never smokers: Results from the Austrian BOLD study

B. Lamprecht ^{a,*}, L. Schirnhofner ^a, B. Kaiser ^a, S. Buist ^b, M. Studnicka ^a

^a Department of Pulmonary Medicine, Paracelsus Medical University Hospital, Salzburg, Austria

^b Department of Pulmonary and Critical Care Medicine, Oregon Health and Science University, Portland, OR, USA

Received 6 May 2008; accepted 9 July 2008

Available online 22 August 2008

KEYWORDS

Burden of Obstructive Lung Disease Study; Chronic obstructive pulmonary disease; Health-related quality of life; Never smoker; Respiratory symptoms; Non-reversible airway obstruction

Summary

Background: The presence of non-reversible airway obstruction (AO) in never smokers has only received limited attention until now.

Methods: We analyzed data from the Austrian Burden of Obstructive Lung Disease (BOLD) study. We defined non-reversible AO as post-bronchodilator $FEV_1/FVC < 0.7$ which corresponds to COPD I and higher (COPD I+) according to current GOLD guidelines. Significant AO was defined as $FEV_1/FVC < 0.7$ and $FEV_1 < 80\%$ predicted (GOLD II and higher, GOLD II+). The prevalence and characteristics of non-reversible AO in never smokers were analyzed in relation to the severity of the disease.

Results: Never smokers comprised 47.3% of the study population. Non-reversible AO was seen in 18.2% of never smokers, and 5.5% of never smokers fulfilled criteria for significant non-reversible AO (GOLD stage II+). Therefore, the resulting population prevalence of significant non-reversible AO (GOLD stage II+) was 2.6%. Never smokers with non-reversible AO were predominantly female and slightly older. The airway obstruction was found to be less severe as compared with ever smokers. Despite this, 20% of never smokers with significant non-reversible AO (GOLD stage II+) reported respiratory symptoms and 50% reported impairment of quality of life. This burden of illness in never smokers was similar to that in smokers when severity of AO was taken into account.

Conclusion: Approximately every third subject with non-reversible AO has never smoked, yet still demonstrates a substantial burden of symptoms and impairment of quality of life. Never smokers should receive far greater attention when efforts are undertaken to prevent and treat chronic airway obstruction.

© 2008 Elsevier Ltd. All rights reserved.

* Corresponding author. Department of Pulmonary Medicine, University Hospital Salzburg, Müllner Hauptstrasse 48 5020, Salzburg, Austria. Tel.: +43 662 4482 3301; fax: +43 662 4482 3303.

E-mail address: b.lamprecht@salk.at (B. Lamprecht).

Introduction

On a global scale, the majority of chronic non-reversible airway obstruction occurs in current or former smokers. However there is evidence that subjects who have never actively smoked themselves can also develop chronic airflow limitation and might thus comprise a substantial proportion of this disorder.¹

Our understanding of genetic and environmental risk factors for the development of chronic, non-reversible airway obstruction is still incomplete and this is especially true for never smokers. Although this disorder appears to be fairly prevalent in never smokers, only a limited number of studies have described this population in greater detail.^{1–3}

To estimate the burden of non-reversible airway obstruction in never smokers, we analyzed data from the population-based Austrian Burden of Obstructive Lung Disease (BOLD) study.⁴ We reported the prevalence in never smokers and described the presence of symptoms and their impact on health-related quality of life.

Materials and Methods

Study population

The population consisted of participants of the Austrian Burden of Obstructive Lung Disease (BOLD) study.⁴ In this study, a gender-stratified random sample of the inhabitants of Salzburg County aged 40 years and over was surveyed. The study was approved by the local Ethics Committee of Salzburg County, and all participants gave written informed consent.

Study measures

Spirometry was done according to American Thoracic Society (ATS) criteria⁵ by trained and certified technicians using the NDD Easy One™ spirometer. Separate measurements were taken before and at least 15 min after two puffs of salbutamol (200 mcg). Only spirometry that met ATS acceptability and reproducibility criteria⁵ were included. Of the 1349 participants with post-bronchodilator spirometry, 1258 (93%) met the quality control criteria and were included in this analysis.

Questionnaire data

The BOLD questionnaires, administered by trained and certified staff, included information on respiratory symptoms, risk factors for COPD, health status, co-morbidities, respiratory diagnoses, and limitation of activity. The BOLD Core questionnaire was developed from pre-existing validated questionnaires that had already been used in multi-national studies when possible.⁶

Definitions

In accordance to the GOLD guidelines, non-reversible airway obstruction was defined as a post-bronchodilator $FEV_1/FVC < 0.70$, which corresponds to GOLD stage I and higher. We also reported data for GOLD stage II or higher,

which corresponds to $FEV_1/FVC < 0.70$ and a predicted $FEV_1 < 80\%$. COPD GOLD stage II or higher was defined as clinically significant disease. The NHANES III reference equations were used to calculate predicted values and lower limits of normal (LLNs).⁷

Doctor-diagnosed COPD was defined as a self-reported physician's diagnosis of chronic bronchitis, emphysema, or COPD.

Ever smoking (current or former smoking) was defined as smoking more than 20 packs of cigarettes in a lifetime or more than 1 cigarette/day for a year.

Exposure to passive smoke (y/n) was defined as an affirmative answer to the question asking whether anyone (other than the participant) had smoked a cigarette, pipe or cigar in the home during the past two weeks.

Exposure to agricultural dust (farming), flour, feed or grain milling, and cotton or jute processing was defined as occupational exposure to organic/biologic dust. Working with asbestos, coal mining, hard-rock mining, foundry or steel milling, and sandblasting was defined as occupational exposure to inorganic dust. Welding, fire-fighting, and chemical or plastic manufacturing was defined as occupational exposure to irritant gases, fumes or vapors. Biomass exposure included exposure to indoor open fire with coal, coke, wood, crop residue or dung.

Health status measures included four indicators of participants who: (1) responded "excellent" or "very good" when asked to rate their general health; (2) responded "none of the time" or "a little of the time" when asked how much of their time they experienced limitations in work or other activities "as a result of your physical health,"; (3) responded "none of the time" or "a little of the time" when asked how much of their time they accomplished less than they liked "as a result of any emotional problems,"; and (4) responded "none of the time" or "a little of the time" when asked how much of their time they felt downhearted or depressed "as a result of your physical health".

Statistical analysis

In contrast to previously reported data,⁴ no additional weighting class adjustments were made for sampling and differential response rates for different age categories. Statistical significance of differences was evaluated using the chi-squared test and the non-parametric Mann–Whitney *U*-Test. All statistical analyses were done with SAS 8.2 (SAS Institute Inc, Cary, NC, USA).

Results

Prevalence of non-reversible airways obstruction

In never smokers, the prevalence of non-reversible airway obstruction (GOLD stage I+) was 18.2%. Prevalence of COPD GOLD stage II+ was 5.5%. Altogether, never smokers comprised 27.7% of clinically significant disease (GOLD stage II+) (see Table 1). Similar GOLD stage II and higher COPD prevalences were seen when we used local prediction equations in place of the US NHANES III equations (data not shown). When the presence of non-reversible airway

Download English Version:

<https://daneshyari.com/en/article/4212219>

Download Persian Version:

<https://daneshyari.com/article/4212219>

[Daneshyari.com](https://daneshyari.com)