



ORIGINAL

## Co-morbidities in patients with gold stage 4 chronic obstructive pulmonary disease<sup>☆</sup>

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### KEYWORDS

COPD;  
co-morbidities;  
exacerbation

### Abstract

**Introduction:** Chronic Obstructive Pulmonary Disease (COPD) is associated with several co-morbidities, however their prevalence varies from one study to another.

**Aim:** To determine the prevalence of several co-morbidities in patients with COPD severity score GOLD 4 (*The Global Initiative for Chronic Obstructive Lung Disease*, 2010) followed in ambulatory care, in a University Hospital.

**Methods:** A questionnaire was designed and carried out in order to characterize COPD and its co-morbidities. Clinical files were consulted in order to complete the data.

**Results:** 89 patients (87% male) with a mean age of 68 years old, of which 79% were ex-smokers, were included. The average value of FEV<sub>1</sub> (forced expiratory volume in one second) was 38% of the expected values and all the patients presented chronic respiratory failure. Thirty-five patients (39%) were frequent exacerbators.

Thirty-seven patients (42%) had been hospitalized at least once due to exacerbation of their respiratory disease in the previous year, and 66 patients (74%) hospitalized in the previous five years.

Most of the patients (97%) presented at least one comorbidity, with an average of 4 co-morbidities per patient and an average Charlson index of 2.

The most frequent co-morbidities were cardiovascular diseases (69%), osteoarticular pathology (51%), erectile dysfunction (48%), sleep apnoea syndrome (43%) dyslipidaemia (35%), cataracts (31%), gastroesophageal reflux (29%) and diabetes (20%).

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**PALAVRAS CHAVE**

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Frequent exacerbators presented an increased risk of having two or more co-morbidities (Odds Ratio of 5), as well as a higher prevalence of gastroesophageal reflux ( $p=0,0006$ ) and more hospitalizations in the last year and in the previous 5 years ( $p < 0,001$ ).

**Conclusion:** This study confirmed the high prevalence and the association of co-morbidities in patients with COPD severity score GOLD 4, thus justifying the need for a comprehensive and integrating therapeutic approach.

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**Comorbilidades em doentes com doença pulmonar obstrutiva crónica estágio IV****Resumo**

**Introdução:** A Doença Pulmonar Obstrutiva Crónica (DPOC) está associada a várias comorbilidades, contudo a prevalência das mesmas varia entre os estudos.

**Objectivo:** Determinar a prevalência das diversas comorbilidades em doentes com DPOC estágio IV do GOLD (*The Global Initiative for Chronic Obstructive Lung Disease*, 2010) seguidos em regime de ambulatório, num Hospital Universitário.

**Métodos:** Foi concebido e aplicado um questionário com o objectivo de caracterizar a DPOC e suas comorbilidades. Os dados foram completados por consulta do processo clínico.

**Resultados:** Foram incluídos 89 doentes (87% do género masculino), com média etária de 68 anos, 79% dos quais ex-fumadores. O valor de FEV<sub>1</sub> (*forced expiratory volume in one second*) médio foi de 38% do previsto e todos os doentes apresentavam insuficiência respiratória crónica. Trinta e cinco doentes (39%) eram exacerbadores frequentes.

Trinta e sete doentes (42%) tinham apresentado pelo menos um internamento por exacerbação da sua doença respiratória no ano anterior e 66 doentes (74%) nos últimos 5 anos.

A maioria dos doentes (97%) apresentava pelo menos uma comorbilidade, com uma média de 4 comorbilidades por doente e um índice de *Charlson* médio de 2.

As comorbilidades mais frequentes foram doenças cardiovasculares (69%), patologia osteoarticular (51%), disfunção eréctil (48%), síndrome da apneia do sono (43%), dislipidémia (35%), cataratas (31%), refluxo gastro-esofágico (29%) e diabetes (20%).

Os exacerbadores frequentes apresentaram um risco aumentado de terem 2 ou mais comorbilidades (*Odds Ratio* de 5), bem como uma maior prevalência de refluxo gastro-esofágico ( $p=0,006$ ) e um maior número de internamentos no último ano e nos 5 anos anteriores ( $p < 0,001$ ).

**Conclusão:** Este estudo confirmou a elevada prevalência e a associação de comorbilidades em doentes com DPOC GOLD estágio IV, justificando a necessidade de uma abordagem terapêutica abrangente e integradora.

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**Introduction**

Chronic Obstructive Pulmonary Disease (COPD) is characterized by a limitation of the airflow; it is a preventable and treatable disease. It is usually progressive and is associated to an enhanced inflammatory response to noxious particles or gases in the airways and lungs<sup>1</sup>. Exacerbations and co-morbidities contribute to the global severity in some patients, a fact that is responsible for the growing interest of the scientific community in characterizing the co-morbidities associated with COPD.

The physiopathological mechanism that is behind COPD and the diverse co-morbidities is not yet fully explained. The high prevalence of co-morbidities in patients with COPD is apparently due to numerous different factors and is related to age, to systemic effects of smoking and to adverse effects of some drugs.<sup>2,3</sup> Moreover, COPD's systemic inflammation

might also represent the mechanism between COPD and some co-morbidities<sup>1,2,4</sup>

Co-morbidities that are most frequently associated to COPD are diabetes mellitus, osteoporosis, depression, and lung cancer.<sup>3-5</sup>

The aim of this study was to determine the prevalence of multiple co-morbidities in patients with COPD severity score GOLD 4 followed in ambulatory care, and to determine a relationship between comorbidities, exacerbations and admissions.

**Material and Methods****Sampling**

A cross-sectional study with a retrospective analysis was carried out. Patients were included consecutively between 15<sup>th</sup> of July of 2010 and 31<sup>st</sup> of December 2010.

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