



## Editorial

Changes in Chronic Obstructive Pulmonary Disease Mortality Trends: Fact or Fiction?<sup>☆</sup>

## Cambios en la tendencia sobre la mortalidad por enfermedad pulmonar obstructiva crónica: ¿realidad o ficción?

Cristina Represas Represas,<sup>a</sup> Alberto Ruano Raviña,<sup>b,c</sup> Alberto Fernández Villar<sup>a,\*</sup><sup>a</sup> Servicio de Neumología, Complejo Hospitalario Universitario de Vigo, Instituto de Investigación Biomédica de Vigo, Vigo, Pontevedra, Spain<sup>b</sup> Área de Medicina Preventiva y Salud Pública, Universidad de Santiago de Compostela, Santiago de Compostela, La Coruña, Spain<sup>c</sup> CIBER de Epidemiología y Salud Pública – CIBERESP, Spain

Because of its high prevalence, morbidity and mortality and associated costs, chronic obstructive pulmonary disease (COPD) is today a major health problem.<sup>1</sup> The cumulative effects of exposure to tobacco smoke, progressive population ageing, less under-diagnosis and the effect of new treatments and better living conditions are all factors that could change COPD prevalence and mortality rate. Both prevalence and mortality are expected to peak in the next 20–30 years<sup>1–3</sup> but several Spanish, European and US cohort studies in COPD mortality trends have raised doubts as to whether prevalence really is stabilising or even falling.<sup>2,4,5</sup> Of particular relevance is the work of López-Campos et al.<sup>5</sup> in analysing COPD mortality patterns in 27 European countries (including Spain) between 1994 and 2010. The study shows a steady downward trend in mortality among men, although far less so among women, in most of the countries studied, suggesting a rather more optimistic view of the future of the disease.

The discrepancies between these results and those of other studies force us to reflect on the findings and consider whether COPD mortality rates are actually falling, or whether the study methodology is flawed, since it is notoriously difficult to establish the specific cause of death and precipitating factors in patients with this disease, particularly those of more advanced age and disease severity.<sup>3,5,6</sup> Several studies have shown that mortality from COPD is under-reported in patients with very severe COPD, so that only 22% of death certificates list this as the primary causes of death.<sup>7</sup> Paradoxically, in nearly half of all cases in which COPD is given as the cause of death, obstruction was not detected on spirometry, illustrating the prevalence of diagnostic imprecision in COPD.<sup>7</sup> Factors such as improvements in systems used to register and encode causes of death together with greater accuracy in diagnosing COPD could, according to the authors,<sup>5,8</sup> be affecting these results. The steady increase in the mean age of patients dying from COPD in

Spain, 76.3 years in 1990 for men and 79.7 years for women and in 2005, 79.7 years for men and 83.7 years for women,<sup>1</sup> only serves to “complicate” the accuracy of cause in death codes. For clinicians it is increasingly difficult to determine whether an elderly patient had died “from” COPD or “with” COPD, since it is comorbid with decompensated heart disease, advanced tumours or acute infectious processes. The TORCH study was the first large international clinical trial to analyse the causes of death in patients with COPD. A committee of experts showed that the real cause of death only coincided with that reported in the patients’ medical history in half the cases studied.<sup>6</sup> Under-reporting COPD as the cause of death on death certificates could also be related to the fact that these certificates are often filled out by physicians not directly involved in the patient’s care.

Another interesting finding of the López Campos study<sup>5</sup> is the existence of contrasting data from different countries: despite the global trend described above, over the study period mortality from COPD in men increased in 5 countries and in women in 11 countries, particularly Greece, Malta, Estonia and Luxembourg.

Studies in respiratory disease trends<sup>4,5</sup> that analyse disease patterns, specifically COPD, are particularly relevant for three reasons.

First, they clearly show the need for more in-depth research into COPD as a cause of death, given the almost total lack of investigation into the reliability of this diagnosis. This is very important in terms of planning healthcare policies and assigning resources to COPD prevention and treatment strategies, since a reduction in COPD mortality rates would, in the medium term, enable resources to be allocated to other pathologies. It would be interesting to study in detail the real causes of death of patients included in population-based COPD prevalence studies in Spain<sup>9</sup> and in COPD cohorts indexed by various Spanish research groups<sup>10</sup> to ascertain how cause of death was coded, particularly in the elderly population.

Secondly, these studies highlight the need for physicians to accurately record their professional activity so that their notes can be used in reliable studies providing greater insight into the diseases we treat. This is evidenced by the doubts raised in this article and accompanying editorial concerning the correct, or incorrect, registry of causes of death from COPD.<sup>5,8</sup>

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\* Corresponding author.

E-mail address: [alberto.fernandez.villar@sergas.es](mailto:alberto.fernandez.villar@sergas.es) (A. Fernández Villar).

Thirdly, studies that give an overview of a particular health problem and its evolution over time allow us to clearly judge the effectiveness of available therapies, explain the differences found in theoretically similar populations, ascertain whether trends differ according to gender, and associate possible changes in trend to the introduction of more effective treatment or public health strategies capable of changing disease patterns. This is why similar studies on mortality and prevalence are needed, not only for COPD but also for other common respiratory pathologies such as asthma or sleep apnoea–hypopnoea syndrome, particularly in light of the recent report by the Spanish National Institute of Statistics showing a 12% increase in mortality due to respiratory disease in Spain between 2010 and 2012.<sup>11</sup> Such studies will allow us to allocate research resources to the pathologies with the greatest disease burden.

## References

1. Estrategia Nacional en EPOC del Sistema Nacional de Salud. Ministerio de Sanidad y Política social; 2013 <http://www.mssi.gob.es/organizacion/sns/planCalidadSNS/frmjornadaEpec.htm>
2. Almagro P, Salvadó M, Garcia-Vidal C, Rodriguez-Carballeira M, Delgado M, Barreiro B, et al. Recent improvement in long-term survival after a COPD hospitalisation. *Thorax*. 2010;65:298–302.
3. Soler-Cataluña JJ, Martínez-García. Metodología e impacto clínico de los estudios de mortalidad en la EPOC. *Arch Bronconeumol*. 2008;44 Suppl. 2:21–8.
4. Ford ES, Mannino DM, Wheaton AG, Giles WH, Presley-Cantrell L, Croft JB. Trends in the prevalence of obstructive and restrictive lung function among adults in the United States: findings from the National Health and Nutrition Examination surveys from 1988–1994 to 2007–2010. *Chest*. 2013;143:1395–406.
5. López-Campos JL, Ruiz-Ramos M, Soriano JB. Mortality trends in chronic obstructive pulmonary disease in Europe, 1994–2010: a joinpoint regression analysis. *Lancet Respir Med*. 2014;2:54–62.
6. Drummond MB, Wise RA, John M, Zvarich MT, McGarvey LP. Accuracy of death certificates in COPD: analysis from the TORCH trial. *COPD*. 2010;7:179–85.
7. Jensen HH, Godtfredsen NS, Lange P, Vestbo J. Potential misclassification of causes of death from COPD. *Eur Respir J*. 2006;28:781–5.
8. Ekström MP. The rise and fall of COPD mortality. *Lancet Respir Med*. 2014;2:4–6.
9. Soriano JB, Miravittles M, Borderías L, Duran-Tauleria E, García Río F, Martínez J, et al. Geographical variations in the prevalence of COPD in Spain: relationship to smoking, death rates and other determining factors. *Arch Bronconeumol*. 2010;46:522–30.
10. Marín JM, Alfageme I, Almagro P, Casanova C, Esteban C, Soler-Cataluña JJ, et al. Multicomponent indices to predict survival in COPD: the COCOMICS study. *Eur Respir J*. 2013;42:323–32.
11. Instituto Nacional de Estadística. <http://www.ine.es/prensa/np830.pdf>