

## Analysis of Publications on COPD in ARCHIVOS DE BRONCONEUMOLOGÍA 2 Years After the Designated COPD Year

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In the past, chronic obstructive pulmonary disease (COPD) has been ill favored by its definition and a lack of agreement on its name in Spanish, and because of the social class of the patients it affects. Research has been hindered by lack of resources available and poor infrastructure, and the number of units specialized in COPD treatment has been insufficient. According to Celli<sup>1</sup> estimates suggest that COPD will be the third leading cause of death in the world by 2020 and 80% of the COPD patients in Spain were reported to be unaware they suffer from the disease. Furthermore, he reports it is noteworthy that only 20% of COPD patients receive treatment in accordance with current recommendations. For Celli, the pessimism that surrounds the efficacy of the therapeutic options available and the contradictory use of forced expiratory volume in 1 second as a marker of response to treatment have both contributed in equal measure to the passive attitude of the scientific community towards COPD. The attitude of the pulmonology community is therefore one of extreme skepticism or unwillingness to recognize the existence of COPD.

A chain of events, however, have renewed interest in the disease, and increasing numbers of pulmonologists are deigning to pay COPD the attention it deserves. COPD, however much we choose to ignore it, exists and, in the words of Celli, the time has come to change our perspective; a new paradigm has arrived.<sup>1</sup> What better way to start than with a more appropriate definition? The American Thoracic Society and the European Respiratory Society have recently defined COPD as a preventable and treatable disease, characterized by airflow limitation. This limitation, essentially related to smoking, is not completely reversible and appears because of an abnormal inflammatory response in the lungs to certain toxic particles and inhaled gases. This definition, which

complements the classic definition of the disease as bronchial obstruction and inflammation, is valuable because important systemic consequences of COPD are mentioned for the first time.<sup>2</sup>

A further novel and positive aspect in the current focus in COPD, and an aspect which is attracting the interest of pulmonologists, is the tendency towards a multifactorial assessment of COPD patients. Thus, in addition to the loss of respiratory capacity, dyspnea is also taken into account and systemic repercussions are included. This approach has given rise to the BODE index, which takes into consideration a 6-minute walk test, body mass index, severity of dyspnea, and forced expiratory volume in 1 second. The BODE index has proved better than the forced expiratory volume in 1 second alone for predicting the risk of death from any cause, whether respiratory or not, in COPD patients.<sup>3</sup>

For evaluating treatment, we have also managed to improve the design of studies of new drugs for COPD, and so the previous pessimism about therapy has given way to guarded optimism. For example, the UPLIFT (Understanding Potential Long-term Impacts on Function with Tiotropium) study recruited 6000 patients in 34 countries. The primary endpoint was decline in lung function over time, though the study also assessed other important outcome measures such as health-related quality of life, exacerbation rate, and mortality. According to the new COPD paradigm, we are now interested in both the bronchodilatory potential of a drug and its effectiveness at reducing exacerbations, improving the quality of life, and reducing mortality. The findings from this interesting double-blind controlled clinical study will not be available until 2008, though they should not only be able to confirm the efficacy of the agents tested, but also provide much more information about other factors related to the disease.

The Board of Directors of the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR), in their enthusiasm for this rediscovery of COPD, created the COPD Commission in 2001 to draw up a joint strategy of activities aimed at extending knowledge, awareness, and debate about the disease in 2002. The year 2002

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TABLE 1  
Publications per Year on COPD in ARCHIVOS DE BRONCONEUMOLOGÍA, Recovered From a Search of the SEPAR Web Site With the Word "EPOC" (Spanish Abbreviation for Chronic Obstructive Pulmonary Disease)

Year of Publication	No. of Articles
1998	5
1999	12
2000	14
2001	18
2002	18
2003	13
2004 (January to August)	10
Total	90

TABLE 2  
Publications on COPD in ARCHIVOS DE BRONCONEUMOLOGÍA Between January 2002 and August 2004, Grouped by Type of Article

Type of Article	No. of Publications
Editorials <sup>4,9-14</sup>	7
Reviews <sup>15-19</sup>	5
Original articles <sup>6,20-50</sup>	32
Special articles <sup>1,51-55</sup>	6
Letters to the editor <sup>7,8,56-59</sup>	6
Monographs <sup>60-62</sup>	3
Others <sup>5</sup>	1
Total	60

was designated as the COPD year. The main aims were twofold: first, to raise awareness among Spanish specialists and physicians about the serious clinical and therapeutic problems associated with the disease, and second, to bring the extent of the disease to the attention of opinion leaders, politicians, and sociologists.<sup>4</sup> The COPD year ended with a consensus conference on the disease, the first of its type in the Spanish pulmonology community.<sup>5</sup>

Two years have passed since the COPD year and we are all witness to the positive changes in attitude towards the disease taking place both in the international scientific community and within the Spanish scientific community. The initiatives made during the COPD year have certainly benefitted COPD patients in Spain, but there is still a long way to go. We must not let the efforts of Spanish pulmonologists fall by the wayside, and we should remain resolute until the health sector in Spain recognizes the true importance of COPD.

Ever since the designation of the COPD year by the Board of Directors of SEPAR, articles appearing in ARCHIVOS DE BRONCONEUMOLOGÍA have reflected the growing interest in COPD in Spain. During this period, a total of 60 articles related to COPD published between January 2002 and August 2004 have helped raise awareness of the problems associated with the disease.<sup>1,4-62</sup> These articles have covered almost all areas of knowledge of the disease.

We queried the electronic search engine of ARCHIVOS DE BRONCONEUMOLOGÍA in the SEPAR web page using the keyword "EPOC" (the Spanish equivalent of COPD) in the field "Word(s) in title or summary," specifying 1-year periods since 1998. Table 1 shows the number of articles found per year from 1998 to 2004. However, these figures underestimate true production if authors used the full Spanish term "*enfermedad pulmonar obstructiva crónica*" (for chronic obstructive pulmonary disease) without using the Spanish acronym EPOC. For example, an article by López-Campos et al,<sup>6</sup> in which hospital admissions due to COPD in Andalusia in 2000 were analyzed, and one by Roig et al,<sup>7</sup> who questioned whether levofloxacin should be used as empirical antibiotic treatment for COPD exacerbations in patients with mild disease, no comorbidity, and those under 65 years old, are not included. Between January 2002 and August 2004, queries with the text "chronic obstructive pulmonary disease" retrieved 41 articles. When we used other keywords, we retrieved 60 articles, which we will now discuss. We take advantage of the opportunity to reiterate the need for Spanish-speaking pulmonologists to agree on a single term—the Spanish acronym EPOC—for what we consider a single disease.<sup>8</sup>

Table 2 shows the distribution of the 60 articles according to type of publication. It is striking that more than half (32) are original articles, suggesting that Spanish researchers are keen to learn more about the disease.<sup>6,20-50</sup> The limited number of "Letters to the Editor,"—only 6<sup>7,8,56-59</sup>—is also noteworthy despite the policy of this journal to encourage debate, discussion, and comments through this form of communication. Such letters are accepted quickly, making them more immediate, and they help increase the impact factor (currently 0.885) of ARCHIVOS DE BRONCONEUMOLOGÍA.<sup>63-65</sup>

Examination of the areas of knowledge covered shows 8 articles pertaining to clinical aspects of COPD,<sup>16,20,26,27,41,42,45,46</sup> 6 about exacerbations,<sup>7,9,51,52,55,59</sup> and 10 dealing with different therapeutic aspects, including noninvasive ventilation<sup>10,15,17,22,23,25,37,48,57,62</sup> (Table 3). Noninvasive ventilation techniques have been shown to offer valuable support in acute respiratory failure due to a variety of causes, but most scientific evidence on their efficacy has concentrated on COPD exacerbations. Intermediate respiratory care units continue to be generally unavailable in Spain. This can only change if pulmonologists, opinion leaders, and health managers understand the need to set up such units and accept responsibility for their planning and development. Resources must be made available, particularly human resources in the form of well-trained personnel devoted solely to noninvasive ventilation.<sup>17</sup>

Only 2 articles focus on the importance of spirometry.<sup>28,50</sup> One of these supports this technique as a good method for detecting and monitoring COPD in high-risk smokers in primary health care.<sup>50</sup> Such articles are necessary because we have recently found that more than 70% of the patients are unaware that they suffer

TABLE 3  
Publications on COPD in ARCHIVOS DE BRONCONEUMOLOGÍA Between January 2002 and August 2004,  
Grouped by Areas of Knowledge\*

	Clinical	Exacerbation	NIV Treatment	Spirometry	Rehabilitation, Exercise, Muscles	Epidemiology, Use of Resources, and Cost	Primary Health Care-Specialist Relationship	Inflammation	Miscellaneous
Editorials	–	–	1	–	–	1	–	1	4
Reviews	1	–	2	–	2	–	–	–	–
Original articles	7	1	5	2	1	6	4	3	3
Special articles	–	3	–	–	1	–	–	–	2
Letters to the editor	–	2	1	–	–	–	–	–	3
Monographs	–	–	1	–	2	–	–	–	–
Others	–	–	–	–	–	–	–	–	1
Total: 60	8	6	10	2	6	7	4	4	13

\*NIV indicates noninvasive ventilation.

from the disease. In actual clinical practice, spirometry is virtually unknown in primary health care.<sup>66</sup> Our hospital, with 24 health centers, caters to an urban area with approximately 700 000 inhabitants. Of these centers, only 18 have spirometers available and only 15 (62.5%) centers practice spirometry. The other 3 have never used the spirometers, which remain in their boxes in the storeroom. The centers with spirometers lack personnel devoted solely to carrying out the tests—these are indicated and performed by the physician and the corresponding nurse, and some physicians will make more ready use of such tests than others. On average, 2 spirometry tests are performed per week in each health center, giving some idea of how little the resource is used. To make matters worse, the spirometers have not been calibrated since they were delivered, and so the results are unreliable. There is therefore a lack of motivation and sensitization towards this useful and necessary diagnostic tool in primary health care in our health care area. A similar underuse probably also exists in other areas as well. The conclusions of Clotet et al<sup>50</sup> were to recommend that a working group covering both primary health care and pulmonology be set up to establish criteria for screening, monitoring, and assessment of COPD. Given the high prevalence of COPD in Spain, and also the unacceptably high number of undiagnosed patients with the disease and resulting high costs, more effort should be made to ensure widespread use of spirometry in primary health care. Health care authorities should encourage physicians in primary health care to participate in campaigns for early detection of COPD patients and such campaigns would need to encourage use of spirometry at this level of care. Clotet et al<sup>50</sup> make valid points when they discuss the resources that they consider necessary, namely, a spirometer, personnel qualified in use of the technique, and—most importantly in our opinion—the availability of space and time.

Other areas of knowledge dealt with in publications in this journal include different aspects of rehabilitation, exercise tolerance, and muscular function in COPD (6 articles<sup>19,24,44,49,60,61</sup>). Four original papers address the desired relationship between primary health care and

specialists.<sup>30,34,36,54</sup> Interest in the resources needed for COPD, its costs, and its prevalence—also important topics in pulmonology—are dealt with in 7 articles.<sup>6,13,31,38–40,47</sup> We know that this disease—responsible for 10% of visits to the pulmonologist, 7% of all admissions to hospital, and 35% of permanent work disabilities—takes a high social and economic toll, and we have current data from Spain published in ARCHIVOS DE BRONCONEUMOLOGÍA. For example, Masa et al<sup>47</sup> recently assessed the cost of COPD in Spain from a representative sample of the overall population aged between 40 and 69 years (IBERPOC study). These authors found that the highest cost comes from hospital admissions (41% of the total cost), followed by pharmacological treatment (37%). The cost per patient was €98.39 and €909.50 per previously diagnosed patient. The cost of severe COPD per person was 3 times the cost of moderate COPD and more than 7 times the cost of mild COPD. The estimated annual cost of COPD in Spain is €238.82 million (reference year, 1997). This study was the first to estimate the cost of COPD in a representative sample of the general population. The cost reported in this study was lower than that estimated in other studies of samples selecting patients with a previous diagnosis of COPD. Both the direct and indirect cost of the disease are expected to rise in coming years because of “successes,” to use the words of Escarrabill,<sup>13</sup> that is, the survival of an aging population, the introduction of new treatments, funding for other treatments such as rehabilitation, and smoking cessation. More patients with chronic respiratory insufficiency will survive, and in particular, the presence in many clinics of extreme skepticism towards COPD treatments, which we alluded to at the beginning of the present article, will disappear.

COPD can be considered as an inflammatory disease of the airways and the parenchyma that damages bronchopulmonary structures, provokes abnormal airway remodeling, and causes progressive decline in lung function long before it is detected by spirometry. This concept of the disease has been analyzed in ARCHIVOS DE BRONCONEUMOLOGÍA in our period of study. Four papers discuss systemic inflammation or

early diagnosis in smokers.<sup>12,29,32,33</sup> Pacheco<sup>12</sup> warns of the importance of detecting underlying inflammation in COPD in the early stages of the disease before the appearance of abnormal spirometry results. He calls this the “silent phase” of spirometry. A better understanding of inflammation in COPD will no doubt lead to improvements in management in the future. According to Pacheco, it may be beneficial to introduce an extensive examination that includes induced sputum sampling and a test for bronchial hyperreactivity for all smokers with chronic respiratory symptoms but with normal spirometry. Such tests would enable subgroups of risk susceptible to antiinflammatory treatment to be identified. The findings might also provide smokers with additional incentive, if indeed additional incentive is needed, to give up smoking.

We finish this analysis of the areas of knowledge covered in the journal during the study period by mentioning 13 articles that discuss diverse topics such as quality of life, a “COPD Cruise,” and the expectations for the terminal respiratory patient, as well as editorials of a philosophical nature.<sup>1,4,5,8,11,14,18,21,35,43,53,56,58</sup>

The large number of articles published in ARCHIVOS DE BRONCONEUMOLOGÍA suggests that COPD is taken seriously by the Spanish pulmonology community. Many fields of action appear active at present. We are concerned about where we came from and where we are going,<sup>67</sup> what requirements pulmonology teaching units should meet,<sup>68</sup> what we need to learn in coming years,<sup>69</sup> the influence of medical schools on the smoking habits of future physicians,<sup>70</sup> the distribution of pulmonologists and thoracic surgeons throughout Spain,<sup>71,72</sup> and some even want to take us on a journey through the upper airway.<sup>73</sup> Amidst so much discussion, we should remember that COPD will be a main preoccupation for Spanish pulmonologists in the future because of its current and increasing prevalence and because of its associated costs. Now that our specialty has rediscovered COPD thanks to the firm push that came from the COPD year, we hope that the monotonous sound of our wheels turning on the rising road we are traveling along does not affect our ability to steer the right course.<sup>74</sup>

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