



LETTERS TO THE EDITOR

COPD: Evidence-based medicine or the patient-centered medicine?



COPD is the most common chronic respiratory disease. Today it is the 4th highest cause of death worldwide and therefore it should always be considered when a patient has chronic dyspnea, cough with or without sputum production, and a history of exposure to risk factors. The diagnosis always requires a spirometry and the ratio FEV1/FVC (or FEV1/VC) is what is normally accepted as the index that defines airway obstruction.¹ Airflow limitation that is not fully reversible is defined by the Global Initiative for Obstructive Lung Diseases² (GOLD) as a post-bronchodilator FEV1/FVC < 0.7, and by the ATS/ERS Task Force position paper³ as a ratio ≤ 0.7. However, this diagnostic criterion has been increasingly questioned. Although simpler and easier to use in primary care settings worldwide, some authors have claimed that it can miss the diagnosis in younger, predominantly female individuals where an early diagnosis brings the greatest benefit, and can lead to over-diagnosis of COPD in older men, missing a heart disease diagnosis, or even an asthma diagnosis, which require a different approach. So, they argue that the lower limit of normal (LLN) criterion (FEV1/FVC < LLN) should be used instead. Some authors also propose a low FEV1/FVC ratio in any criteria, coupled with a FEV1 < 0.8 of the predicted value.⁴ In fact, there is currently no consensus about the best criteria to be used in COPD. In 2010, 150 international experts and 12 international organizations asked GOLD to change its definition of airflow obstruction to LLN criterion,⁵ and, in relation to the use of LLN, a recent editorial in the ERJ stresses the need to improve the diagnosis of early COPD.

The goals of the treatment are symptomatic improvement and prevention of disease progression and exacerbations. The high mortality of COPD is mainly due to exacerbations requiring hospitalization. Exacerbations are in COPD what myocardial infarctions are in coronary artery disease⁶: acute, disease modifying, causing high mortality during hospitalization and in the first year after discharge, and decreased quality of life. At present there is neither a good definition nor an agreed classification of exacerbation. Some authors propose 3 levels of exacerbation; home treated, requiring hospitalization and leading to respiratory

failure. Others suggest a mild level, requiring no change in treatment or only short-acting bronchodilators, a moderate level, requiring systemic corticosteroids/antibiotics and a severe level, requiring hospitalization. In addition, the usual definition of exacerbation as an event characterized by a change in the patient's baseline dyspnea, cough or sputum beyond day-to-day variability, that needs a change in medication, is difficult to use in clinical practice and other definitions are needed, for operational reasons, such as clinical trials.

For therapeutic success in COPD an appropriate therapy is essential, combined with a good level of adherence and correct inhalation technique. Although the clinical and scientific bases of some guidelines are now increasingly debatable,⁷ they represent a standard of care, allowing us to find answers in Evidence Based Medicine and therefore cannot be ignored. However there are numerous other factors⁸ relating to the patients themselves or to the doctor–patient relationship, which determine the therapeutic efficacy: the patient is unaware of the nature of COPD,⁹ plays down symptoms and the severity of the disease, and a set of socio-cultural beliefs or concepts seem to persist in relation to inhaled medication, which can constitute poor adherence factors.

Rand CS¹⁰ did an exhaustive review of the literature with regard to adherence to therapy in patients with COPD, and concluded that the clinical evidence on this topic is not very robust, in fact it seems very poor, and more influenced by the beliefs of patients about the medicines, than by disease severity or demographic factors. Bryant and colleagues¹¹ consider that knowledge about adherence to treatment, and its improvement is critical in the treatment of patients with COPD. But if adherence is a difficult concept to define, it is even more difficult to measure, because there is no "best way". As well as inadequate knowledge about adherence, little is known regarding the patient's beliefs¹² about medicines, in COPD.

Therapeutic success is also dependent on a good inhaler technique, but we do not know how the patient uses the delivery devices, nor is there a "best method" for assessing the inhalation technique, and there is little evidence about the choice of the optimal delivery method or device for each patient.¹³

Thus, in clinical practice, knowing the best medical evidence, although mandatory, is currently not enough, and

we have to focus heavily on patient education, with respect to illness and treatment, and participation in clinical decisions, allowing for patients' perspectives, their medicine and inhalation device preferences, and also their disease and therapeutic related beliefs. We also need to know the physical and emotional needs of the patients, and to treat the comorbid conditions, in order to achieve a better control of COPD. For this purpose, we emphasize the key role of the patient's family or caregivers, and the importance of a multidisciplinary team in patient-centered medicine. More than the diagnosis and treatment, patient centered COPD care involves working with the patient to provide the best care possible and improvement in their quality of life.

Conflicts of interest

The author has no conflicts of interest to declare.

References

1. Culver B. Defining airflow limitation and chronic obstructive pulmonary disease: the role of outcome studies. *Eur Respir J*. 2015;46:8–10.
2. Global Initiative for Chronic Obstructive Lung Disease (GOLD); 2015. Available from: www.goldcopd.org/upload/users/files/GOLD_Report_2015.Feb18.pdf.
3. Celli BR, MacNee W, Agusti A, Anzueto A, Berg B, Buist AS, et al. Standards for the diagnosis and treatment of patients with COPD: a summary of the ATS/ERS position paper. *Eur Respir J*. 2004;23:932–46.
4. Dijk W, Tan W, Li P, Guo B, Li S, Benedetti A, et al. Clinical relevance of fixed ratio vs lower limit of normal of FEV1/FVC in COPD: patient-reported outcomes from the CanCOLD cohort. *Ann Fam Med*. 2015;13.
5. Miller M, Levy M. Chronic obstructive pulmonary disease: missed diagnosis versus misdiagnosis. *BMJ*. 2015;351:h3021.
6. Criner GJ, Bourbeau J, Diekemper RL, Ouellette DR, Goodridge D, Hernandez P, et al. Prevention of acute exacerbation of COPD. American College of Chest Physicians and Canadian Thoracic Society Guideline. *Chest*. 2015;147:894–942.
7. Jeanne Lenzer. Why we can't trust clinical guidelines. *BMJ*. 2013;346:f3830.
8. Wiśniewski D, Porzezińska M, Gruchała-Niedoszytko M, Niedoszytko M, Słomiński JM, Jassem E. Factors influencing adherence to treatment in COPD patients and its relationship with disease exacerbations. *Pneumonol Alergol Pol*. 2014;82:96–104. Available from: www.pneumonologia.viamedica.pl
9. Braido F, Baiardini I, Sumbersi M, Blasi F, Canonica GW. Obstructive lung diseases and inhaler treatment. *Respir Res*. 2013;14.
10. Rand CS. Patient adherence with COPD therapy. *Eur Respir Rev*. 2005;14:97–101.
11. Bryant J, McDonald V, Boyes A, Sanson-Fisher R, Paul C, Melville J. Improving medication adherence in chronic obstructive pulmonary disease. *Respir Res*. 2013;14.
12. Restrepo RD, Alvarez MT, Wittnebel LD, Sorenson H, Wettstein R, Vines DL, et al. Medication adherence issues in patients treated for COPD. *Int J COPD*. 2008;3:371–84.
13. Vincken W, Dekhuijzen R, Barnes P. The ADMIT series – issues in inhalation therapy. *Prim Care J*. 2010;19:10–20.

A. Araújo

Respiratory Department, CHAA, Guimarães, Portugal
E-mail address: duartearaujodr@sapo.pt

<http://dx.doi.org/10.1016/j.rppnen.2015.08.008>

Spontaneous pneumomediastinum in pregnancy: A case report



Dear Editor-in-Chief,

Postpartum spontaneous pneumomediastinum (Hamman's Syndrome) is a well-known but rare complication of pregnancy which is potentially lethal. However, current international pneumothorax guidelines do not give any advice on the management of this life-threatening event.^{1–4}

We report the case of a 30-year-old woman who came to our attention at the 40th week of her pregnancy. She was a non-smoker and had no history of pulmonary diseases.

During the later part of labor, she suddenly developed facial edema, subcutaneous thoracic emphysema and dyspnea.

Arterial blood gas analysis revealed severe hypoxemia and hypocapnia.

Blood pressure and cardiac rate were normal and sensorium was intact (Kelly score = 1).

Chest CT scan showed a large pneumomediastinum with bilateral pneumothorax (Fig. 1).

The patient was submitted to cardio-respiratory monitoring and treated with oxygen and conservative therapy.

Within five days of hospitalization, the patient's condition improved with complete resolution of the subcutaneous emphysema and a partial reabsorption of both pneumomediastinum and pneumothorax.

After a follow-up of two weeks, chest X-ray turned out to be normal.

Patho-physiologically, the development of pneumomediastinum during spontaneous delivery is linked to the sudden laceration of the alveola due to the increase of intrathoracic and intra-abdominal pressure caused by repeated Valsalva maneuvers (Fig. 2).

The main physiological alterations of the respiratory system that occurred during the last part of pregnancy are mainly the consequence of the progestin stimulation of the respiratory drive and consist of a reduction in the functional