International Journal of COPD

Dovepress
open access to scientific and medical research

Open Access Full Text Article

LETTER

# Shrinking the room for invasive mechanical ventilation in acute chronic hypercapnic respiratory failure: yes, but must be sure to have opened windows for noninvasive ventilation

This article was published in the following Dove Press journal:
International Journal of COPD
8 July 2013
Number of times this article has been viewed

Antonio M Esquinas Rodriguez[1]
Rafaelle Scala[2]
Nicolino Ambrosino[3]

[1]International Fellow AARC, Intensive Care Unit, Hospital Morales Meseguer, Murcia, Spain; [2]Respiratory Ward and Respiratory Intensive Care Unit, S, Donato Hospital, Arezzo, Italy; [3]Pulmonary and Respiratory Intensive Care Unit, Cardio-Thoracic Department, University Hospital Pisa, Pisa, Italy



## Dear editor

In the last decade, the treatment and prognosis of chronic obstructive pulmonary disease (COPD) patients have been improved by noninvasive ventilation (NIV).[1]

However, the choice between invasive mechanical ventilation (IMV) and NIV, is still influenced by several critical factors.[2] We read with interest the original article and related commentary by Scarpazza et al, reporting a very high NIV success rate in patients with acute hypercapnic respiratory failure due to acute exacerbations of COPD (AECOPD) with related reduction in IMV-associated complications.[3] Nevertheless, although NIV represents one of the most important progresses in pulmonary medicine in the last decade, we believe that there are still some unresolved questions.

First, there are interhospital differences in the organization of NIV provisions.[4] Second, the final decision on indications and modalities of NIV in patients with AECOPD should rely on experience and guidelines.[5] Third, there is a subgroup of patients not yet clearly evaluated, such as elderly with comorbidities, where studies are limited and do not provide a clear message. Furthermore the influence of COPD stage and underlying cause of AECOPD in outcome of mechanical ventilation is difficult to estimate.[6] Fourth, devices and settings differ among countries, sometimes with scarce perspectives of improvement due to economic aspects.[7]

We believe that there is clear scientific evidence of effect of NIV in these patients. The room for IMV is small, but it must still have open windows to any situation in deciding the type of mechanical ventilation.

## Disclosure

The authors report no conflicts of interest in this correspondence.

Correspondence: Antonio M Esquinas Rodriguez
Avenida Marqués de Los Velez s/n, Murcia, 30008, Spain
Tel +34609321966
Fax +34968232484
Email antmesquinas@gmail.com

## References

1. Hess DR. The evidence for noninvasive positive-pressure ventilation in the care of patients in acute respiratory failure: a systematic review of the literature. *Respir Care*. 2004;49(7):810–829.
2. McCrory DC, Brown C, Gelfand SE, Bach PB. Management of acute exacerbations of COPD: a summary and appraisal of published evidence. *Chest*. 2001;119(4):1190–1209.
3. Scarpazza P, Incorvaia C, Melacini C, et al. Shrinking the room for invasive ventilation in hypercapnic respiratory failure. *Int J Chron Obstruct Pulmon Dis*. 2013;8:135–137.

4. Tsai CL, Lee WY, Delclos GL, Hanania NA, Camargo CA Jr. Comparative effectiveness of noninvasive ventilation vs invasive mechanical ventilation in chronic obstructive pulmonary disease patients with acute respiratory failure. *J Hosp Med*. 2013;8(4):165–172.
5. Berkius J, Sundh J, Nilholm L, Fredrikson M, Walther SM. What determines immediate use of invasive ventilation in patients with COPD? *Acta Anaesthesiol Scand*. 2013;57(3):312–319.
6. Scala R, Bartolucci S, Naldi M, Rossi M, Elliott MW. Co-morbidity and acute decompensations of COPD requiring non-invasive positive-pressure ventilation. *Intensive Care Med*. 2004;30(9):1747–1754.
7. Alaithan AM, Memon JI, Rehmani RS, Qureshi AA, Salam A. Chronic obstructive pulmonary disease: hospital and intensive care unit outcomes in the Kingdom of Saudi Arabia. *Int J Chron Obstruct Pulmon Dis*. 2012; 7:819–823.

# Authors' response

Paolo Scarpazza[1]
Cristoforo Incorvaia[2]
Chiara Melacini[1]
Roberta Cattaneo[1]
Cristiano Bonacina[1]
Gian Galeazzo Riario-Sforza[2]
Walter Casali[1]

[1]Pneumology Unit, Ospedale Civile, Vimercate, [2]Pulmonary Rehabilitation, Istituti Clinici di Perfezionamento, Milan, Italy

Correspondence: Cristoforo Incorvaia
Viale Molise 6, 20137 Milan, Italy
Tel +39 2 551 3852
Fax +39 2 5799 3315
Email cristoforo.incorvaia@gmail.com

## Dear editor

We completely agree with Esquinas Rodriguez, Scala and Ambrosino. In fact, the terms used in the title of our article were "shrinking the room" and not "abandoning" invasive mechanical ventilation (IMV). Concerning the issues raised by the authors, we are of the same opinion about the inter-hospital differences and the need for experience in deciding the appropriate ventilation for patients. In our hospital, noninvasive ventilation (NIV) is started directly in the emergency department following evaluation in most cases by both the resuscitator and a pulmonologist, and continued in semi-intensive respiratory therapy, with a pulmonologist available 24 hours a day. NIV has been used by our group from approximately 20 years ago, each pulmonologist in our unit has the expertise to decide if it is appropriate for a patient with severe acute respiratory failure. For elderly patients, the lack of clear indications was the main basis for the studies we performed on such a subgroup,[1,2] which was also investigated by other authors who introduced the concept of rescue NIV, where the NIV is the only feasible therapeutic option.[3] It is clear that the economic issue influences the availability of devices and settings, but we believe it is necessary from the legislative point of view, at least in Italy, that within the emergency and urgency departments of a medium-size hospital, a semi-intensive respiratory care unit is accessible.

In addition to the significant benefits for some patients by saving an intensive care unit admission or a tracheotomy because of difficult weaning, and therefore recovering substantial economic resources in the subgroup of elderly patients with comorbidities, NIV represents the only therapeutic option possible.

Ultimately, the conclusion by Esquinas Rodriguez et al that "The room for IMV is small, but it must still have open windows" is also our view.

## Disclosure

The authors report no conflicts of interest in this correspondence.

## References

1. Scarpazza P, Incorvaia C, di Franco G, et al. Effect of noninvasive mechanical ventilation in elderly patients with hypercapnic acute-on-chronic respiratory failure and a do-not-intubate order. *Int J Chron Obstruct Pulmon Dis.* 2008;3:797–801.
2. Scarpazza P, Incorvaia C, Amboni P, et al. Long-term survival in elderly patients with a do-not-intubate order treated with noninvasive mechanical ventilation. *Int J Chron Obstruct Pulmon Dis.* 2011;6:253–257.
3. Nava S, Grassi M, Fanfulla R, et al. Non-invasive ventilation in elderly patients with acute hypercapnic respiratory failure: a randomised controlled trial. *Age Ageing.* 2011;40:444–450.