



LETTERS TO THE EDITOR

Materials engineering, mechanical power, protective ventilation and a parachute[☆]



Ingeniería de materiales, *mechanical power*, ventilación protectora y una de paracaídas

Dear Editor:

We have been carefully and enthusiastically reading the manuscript written by Modesto et al. published in your journal.¹

Citing the authors: the fact of interpreting the existence of a mechanical power (MP) threshold that would be originating ventilator-induced lung injury (VILI) means undoubtedly that what we are talking about here is the future of mechanical ventilation.¹ However, paradigm shifts are never easy.

This storm of new concepts, at least for the undersigned, opens a new path in our passion for mechanical ventilation. However, before jumping into opening new doors maybe we should reflect on whether we have managed to close old doors. Is the protective mechanical ventilation completely integrated today in our daily practice for the management of respiratory distress?² Some will be shocked to know that the answer is “no”.

We will be a little more controversial. The escalation of respiratory support measures is happening arbitrarily and triggered by the actual technological trends. The so-called extracorporeal membrane oxygenation (ECMO) technique is the next best thing today.

The statement “ECMO saves lives”³ will need to be confirmed in the future. For the time being it is established that protective ventilation saves lives, muscle relaxation saves lives and prone ventilation saves lives in the management of distress. Let’s do a fly-by on the tools we have available today.

Nearly 15 years ago now, the authors of a very clever paper concluded that the effectiveness of parachutes had

not been put to rigorous test through randomized controlled clinical trials. They also claimed that everybody would benefit here if the most radical detractors put together a blinded, randomized, placebo-controlled clinical trial on the use of parachutes.⁴

Maybe the time is ripe now. If possible and feasible, let’s find the funding for such a trial and let’s coordinate it.⁵ Let us look for the volunteers of this trial among those in whom technological trends take over the rational use of our tools: “Rational escalation of ventilatory support measures that have proven successful increasing survival” versus “the machine that is in fashion now comes first”.

References

1. Modesto I, Alapont V, Aguar Carrascosa M, Medina Villanueva A. Clinical implications of the rheological theory in the prevention of ventilator-induced lung injury: is mechanical power the solution? *Med Intensiva*. 2018, <http://dx.doi.org/10.1016/j.medin.2018.06.005> [article in English, Spanish].
2. Bellani G, Laffey JG, Pham T, Fan E, Brochard L, Esteban A, et al., ESICM Trials Group. Epidemiology patterns of care, and mortality for patients with acute respiratory distress syndrome in intensive care units in 50 countries. *JAMA*. 2016;315:788–800.
3. Combes A, Hajage D, Capellier G, Demoule A, Lavoué S, Guerville C, et al. Extracorporeal membrane oxygenation for severe acute respiratory distress syndrome. *N Engl J Med*. 2018;378:1965–75.
4. Smith GC, Pell JP. Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials. *BMJ*. 2003;327:1459–61.
5. Gattinoni L, Vasques F, Quintel M. Use of ECMO in ARDS: does the EOLIA trial really help? *Crit Care*. 2018;22:171.

P. Escudero-Acha, A. González-Castro*, Y. Peñasco, M. Feo-Gonzalez

Servicio de Medicina Intensiva, Hospital Universitario Marqués de Valdecilla, Santander, Cantabria, Spain

* Corresponding author.

E-mail address: e409@humv.es (A. González-Castro).

2173-5727/

© 2019 Elsevier España, S.L.U. and SEMICYUC. All rights reserved.

[☆] Please cite this article as: Escudero-Acha P, González-Castro A, Peñasco Y, Feo-Gonzalez M. Ingeniería de materiales, *mechanical power*, ventilación protectora y una de paracaídas. *Med Intensiva*. 2019;43:513.