

## OPTIMAL TIME NEEDED FOR WEANING OF MECHANICAL VENTILATION IN COPD: STILL LOOKING FOR THE LOST GOLDEN HOUR

### To the Editor:

In the intensive care unit (ICU), exacerbations of chronic obstructive pulmonary disease (COPD) continue to be a major problem with regard to the criteria for and the decision to initiate mechanical ventilation (MV), with special consideration given to failure of weaning [1]. The avoidance of complications by rapid endotracheal extubation and of post-extubation respiratory failure has an important role in patient outcome [2,3].

In a previous issue of *IMAJ*, Farah and Makhoul [4] report a major finding in their study: there was no correlation between pH, PCO<sub>2</sub> and length of MV in predicting the length of treatment and short MV time. While this is a potentially relevant result, in our view some concerns must be underlined.

Firstly, these findings are interesting especially in light of previous reports of non-invasive ventilation (NIV) in patients with COPD exacerbation. In these reports, the intubation rate in patients treated with NIV varied from as low as 5%–12% of patients [1], to as high as 19%–31% in other studies [3]. Farah and Makhoul [4] report a high rate of endotracheal intubation (ETI) in 122 patients. This is inconsistent with the available literature reporting a much lower ETI rate in patients treated with NIV. Why NIV failed in most of their patients is intriguing. This issue might be clarified if the authors could provide

data on the personnel who were applying NIV, their level of training, and whether NIV application was part of a protocol applied in an ICU environment or in the general wards.

Secondly, understanding the reason for such a high intubation rate could also help us understand how most intubated patients (93% in their study) were extubated in 6 to 140 hours (mean 48 ± 42 hours), a relatively short period of MV for patients with severe COPD exacerbation. These high rates of successful extubation are largely inconsistent with previous studies, most of which report high mortality rates and prolonged duration of mechanical ventilation [5].

Finally, the authors suggest the existence of a strict correlation between PCO<sub>2</sub> and PeCO<sub>2</sub>. However, previous studies in COPD patients did not find strong evidence to support a consistent correlation between PCO<sub>2</sub> and PeCO<sub>2</sub>. No doubt further studies are needed to better characterize the optimal time for withdrawal of MV in severe COPD.

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### To the Editor:

We thank Drs. Esquinas and Soroksky for their comments on our article. In answer to the first comment, all patients were admitted to our department with endotracheal tube, all were intubated prior to the admission, and in some of them the intubation was done after a failed attempt of NIV treatment.

Regarding your second comment, I refer you to the article by Keenan SP, Sinuff T, Cook DJ and Hill NS [Which patients with acute exacerbation of chronic obstructive pulmonary disease benefit from noninvasive positive-pressure ventilation? A systematic review of the literature. *Ann Intern Med* 2003; 138 (11): 861-70], especially Table 2 on page 866.

Looking at all the arterial blood gas values, without doubt NIV treatment was not successful in patients with low values of pH < 7.20, as shown in our patients and in many other studies.

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## Arithmetic is being able to count up to twenty without taking off your shoes

Mickey Mouse, a cartoon character created in 1928 by Walt Disney. An anthropomorphic mouse, Mickey is one of the most recognizable cartoon characters in the world

## Give me a lever long enough, and a prop strong enough, and I can singlehandedly move the world

Archimedes (287-212 BC), Greek mathematician, physicist, engineer, inventor and astronomer