

Category : **Respiratory: monitoring**

A188 - Monitoring the diaphragmatic electrical activity in critically ill patients with covid-19 favours an early detection of high neuro-ventilatory drive.

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Introduction:

COVID-19 may cause acute respiratory failure requiring mechanical ventilation. Assisted ventilation may prevent diaphragm atrophy, facilitating weaning. Nevertheless, a high drive could increase transpulmonary pressure causing patient self-inflicted lung injury (P-SILI). The diaphragmatic electrical activity (EAdi) can be continuously monitored at the bedside and is a reliable surrogate of the neuro-ventilatory drive.

Objectives

To evaluate neuroventilatory drive, in terms of Eadi, during pressure support ventilation (PSV) in critically ill patients with COVID-19.

Methods:

Eadi was continuously recorded for 30 minutes during PSV in 8 patients. PSV was set on clinical basis. For each mechanical breath, Eadi peak, VT, RR were measured. The Eadi peak was classified as

LOW: between 1-5 μ V

NORMAL: between 5-15 μ V

HIGH: over 15 μ V

Results:

The figure shows the distribution of LOW, NORMAL AND HIGH Eadi during the 30 minutes. There was no difference in terms of VT and RR in the three different Eadi classes (VT: 0.43 ± 0.04 l, 0.43 ± 0.10 l 0.47 ± 0.05 l for LOW, NORMAL and HIGH Eadi respectively and RR: 25.52 ± 3.06 b/min, 22.97 ± 5.10 b/min, 21.02 ± 2.52 b/min for LOW, NORMAL and HIGH Eadi).

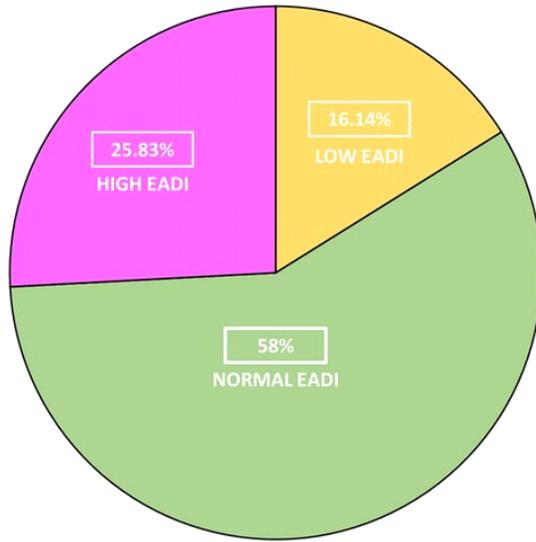
Conclusion:

The incidence of high neuro-ventilatory drive during PSV in our cohort of COVID-19 patients was 25.83 %. The fact that VT and RR were similar among the Eadi classes suggests that the clinical detection of P-SILI may be difficult. Further studies are needed to evaluate whether the incidence of high respiratory drive may influence the duration of mechanical ventilation and other clinically meaningful outcome parameters.

References:

Pierre Esnault, Michael Cardinale, Sami Hraiech, Philippe Goutorbe, Karine Baumstrack, Eloi Prud'homme, Julien Bordes, Jean-Marie Forel, Eric Meaudre, Laurent Papazian, Christophe Guervilly. *High Respiratory Drive and Excessive Respiratory Efforts Predict Relapse of Respiratory Failure in Critically Ill Patients with COVID-19*- Am J Respir Crit Care Med 2020 Oct 15;202(8):1173-1178

Image :



% of Eadi distribution in the study period.