

***Patient-ventilator synchrony in Neurally Adjusted
Ventilatory Assist (NAVA) and Pressure Support
Ventilation (PSV): a prospective observational
study***
Thesis

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Critical Care Medicine

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ABSTRACT

Introduction:

Asynchronies between patient and mechanical ventilator despite optimal adjustment of ventilator parameters are common problem that is partly associated with difficult weaning of mechanical ventilator. NAVA is a mode of proportional ventilation that count on diaphragmatic activity (measured by special esophageal probe and expressed as Edi) to provide proportional support to patient effort which differs from one breath to another according to Edi signal. Our aim was to evaluate the role of NAVA mode in reducing patient ventilator asynchrony and comparing it to PSV in weaning process.

Patients and Methods:

This is a prospective randomized control study conducted on 30 critically ill, invasively ventilated patients admitted to the ICU of Suez Canal Authority Hospital during the period from June 2017 till August 2018.

Patients were randomly divided into two groups: group A include fifteen patients were ventilated in PSV (as a weaning mode) only and evaluated for successful weaning and group B: Fifteen Patients were successively ventilated for 24 h using PSV and then they were ventilated for another 24 h in the NAVA (as a weaning mode).

The patient's physician optimized the ventilator settings in the particular PSV mode to limit the appearance of asynchronies. The incidence of different types of desynchrony was compared between the two modes, then group B patients were evaluated for successful weaning using NAVA and compared to group A.

Results:

Our results showed that NAVA mode significantly reduce the asynchrony index when compared to PSV ($1.1 \pm 0.39\%$ VS. 2.8 ± 1.1 respectively) with p value < 0.001 , Oxygenation index was significantly higher during NAVA (250 in NAVA vs. 210 in PSV) with p value < 0.001 , heart rate and mean arterial blood pressure were significantly reduced during NAVA with P value < 0.001 and 0.015 respectively.

On the other hand, NAVA showed no significant advantage in weaning success over PSV (53% vs. 40% respectively) p value 0.71.

Conclusion:

Using NAVA mode was helpful in reducing patient ventilator desynchronies significantly when compared to PSV (which allow more patient comfort) and also, show significant increase in oxygenation index during NAVA than during PSV.

On the other hand, there were no significant differences between the two modes regarding neither successful weaning nor the 28 days mortality.

Key words:

Neurally adjusted ventilatory assist (NAVA), pressure support ventilation (PSV), patient ventilator asynchrony.

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قالوا

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إلا ما علمتنا إنك أنت
العليم العظيم

صدقة الله العظيم

سورة البقرة الآية: ٣٢