Shortens time of mechanical ventilation by almost 35 %[19]

NAVA, NIV NAVA and Edi monitoring

Personalized ventilation

This document is intended to provide information to an international audience outside of the US.

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Achieve faster personalized weaning with lung- and diaphragm-protective ventilation

5.5% annual growth of patients undergoing prolonged weaning[1]

only **21%** of clinicians detect asynchrony in form of missed inspiratory efforts[2]

63% of patients had diaphragm dysfunction at their first SBT, after at least 24 hours of MV[3]

67% ICU mortality reported for patients with Asynchrony Index >10%[4]

Monitor Edi – the vital sign of respiration, from day zero

In addition to monitoring the impact of mechanical ventilation on lung function, it is also imperative to monitor patient respiratory drive and effort from day zero. Edi monitoring facilitates earlier and more informed decision-making. With this vital sign continuously visible, you can detect diaphragm inactivity, over-sedation, patient-ventilator asynchrony as well as over- and under-assist. You can also monitor increased work-of-breathing during weaning trials and post-extubation[5, 6, 7, 8, 9, 10, 11, 12, 13, 14].

Diaphragm-protective ventilation

Suboptimal mechanical ventilation can rapidly cause acute diaphragm atrophy or load-induced injury associated with poor clinical outcomes[15, 16]. The key physiological benefits of NAVA are that pressure is always delivered in proportion to and in synchrony with the patient's own respiratory drive, and that Edi is readily available as a bedside diagnostic tool[17, 18]. NAVA shortens the time of weaning and mechanical ventilation[19] and increases the number of ventilator-free days[19, 20, 21].

Lung-protective ventilation

A key difference between NAVA and conventional support modes is that tidal volume (VT) is controlled via neuro-electrical output from the patient's respiratory center. Lung over-distension is thus prevented thanks to the Hering-Breuer reflex, which down-regulates the respiratory drive at higher tidal volumes to avoid hyperinflation. As a result, it is possible to achieve lung-protective spontaneous breathing within the protective range of 6–8 ml/kg[17, 18, 22] PBW.

Improved patient experience

NAVA has been shown to improve the patient's overall ICU experience, helping clinicians to potentially reduce sedation with improved comfort and sleep quality[23, 24, 25, 26, 27]. Together, Edi and NAVA assure that the breathing efforts from all patient categories are effectively assessed and responded to. For patients with acute exacerbation of COPD, the non-invasive, leakage-independent NIV NAVA mode can be effective in managing their status and avoiding intubation[13, 28, 29, 30, 31, 32].

Edi monitoring – Pre-intubation
Edi catheter placement allows early respiratory drive monitoring in Standby, and helps predict need for NIV or intubation. Edi monitoring is also available in all non-invasive and invasive ventilation modes.

NAVA – Invasive ventilation
NAVA ventilation is controlled by the patient via the Edi signal in real-time, and delivers assist in proportion to and in synchrony with the patient´s own breathing efforts.

NIV NAVA – Non-invasive option
NIV NAVA relies on the electrical activity of the diaphragm for triggering and termination of breaths which makes it independent of leakage for all types of patient interfaces.

Edi monitoring – Post-extubation
In High Flow oxygen therapy the Edi waveform, numerical values for Edi_{peak} and Edi_{min} are available and trended in order to be able to precisely monitor respiratory drive and effort.

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