

ORAL PRESENTATION

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Impact of the assist ventilation mode on work of breathing (WOB): neurally adjusted ventilatory assist (NAVA) versus pressure support ventilation (PSV) versus proportional assist ventilation plus (PAV+)

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Introduction

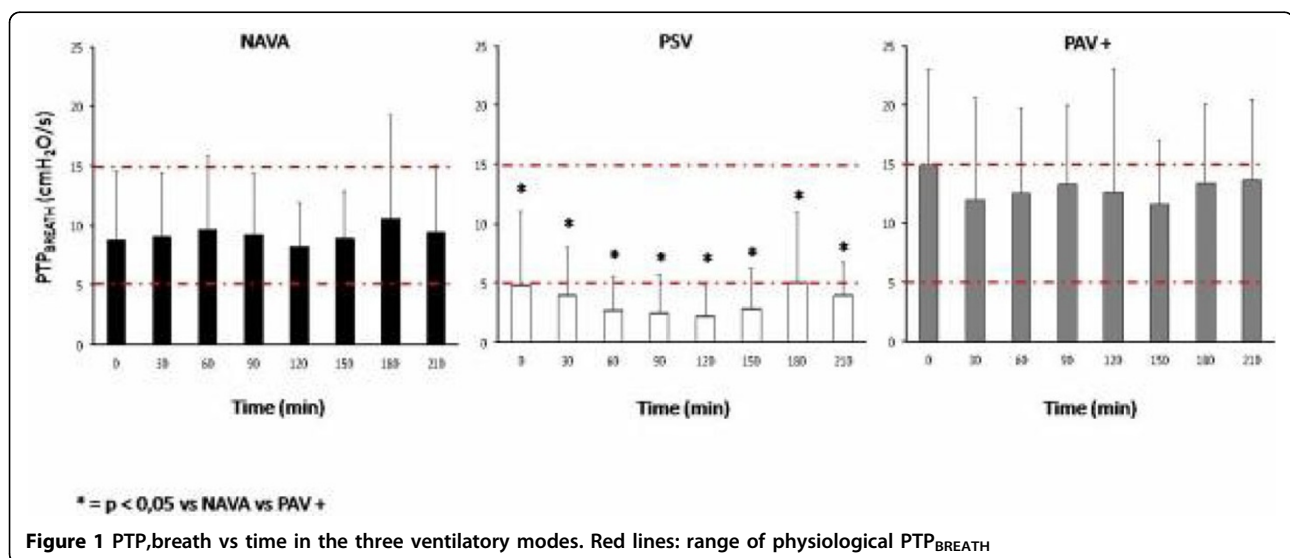
During assisted mechanical ventilation, appropriate WOB prevents diaphragm atrophy and fastens weaning. During PSV the ventilator support is fixed, irrespective of the patient's effort. On the contrary, both the NAVA and PAV + algorithms are designed to amplify patient's spontaneous effort. [1], [2]

Objectives

To test if the assist ventilation mode algorithm has an impact on patient's WOB.

Methods

In 12 patients NAVA, PSV and PAV+ were randomly applied in a crossover fashion, for 4 hours each. The



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electrical diaphragmatic activity (EAdi) was continuously recorded during all the modes. WOB per breath (WOB_{BREATH}) was estimated by converting the EAdi pressure time product (PTP)/breath in muscular PTP/breath (PTP_{BREATH}). The conversion factor was the ratio between EAdi peak and airway opening pressure negative peak during an end-expiratory occlusion.

Results

See figure 1

Conclusions

PTP_{BREATH} was in the physiological range during NAVA and PAV + whereas during PSV remained constantly below it. We speculate that, as compared to PSV, NAVA and PAV+ favored a correct matching between diaphragm contraction and ventilator assistance. Further studies are required to test if the WOB pattern during assisted ventilation has an impact on mechanical ventilation duration and other clinically meaningful outcome parameters.

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