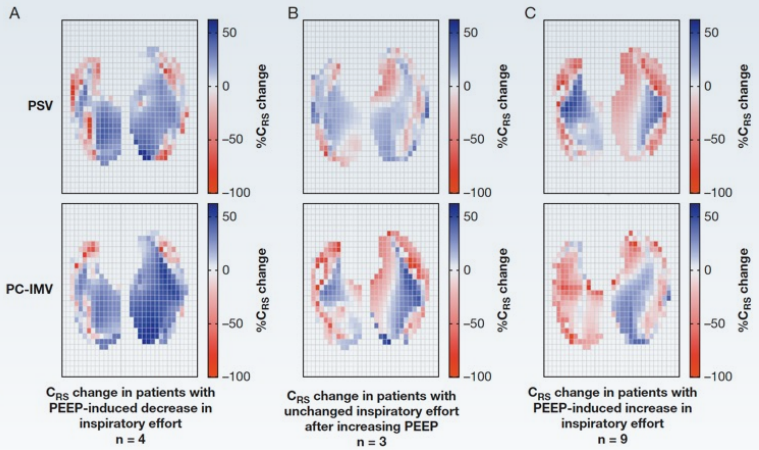
In Patients With ARDS Exhibiting Intense Inspiratory Effort on Assisted Ventilation, Is High PEEP Capable of Reducing Self-Inflicted Lung Injury?

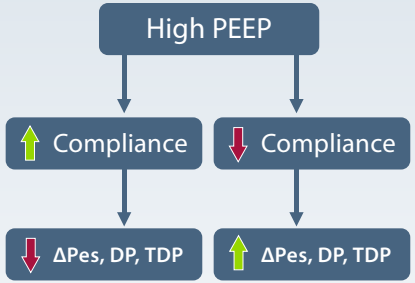
STUDY DESIGN

- 16 patients with PaO_2/FIO_2 ≤200 mm Hg and ΔPes ≥10 cm H_2O
- A randomized sequence of four ventilator settings: positive end-expiratory pressure (PEEP) 5 cm H_2O or PEEP 15 cm H_2O + synchronous (pressure support ventilation [PSV]) or asynchronous (pressure-controlled intermittent mandatory ventilation [PC-IMV]) inspiratory assistance

RESULTS



Regional changes of compliance of the respiratory system between high PEEP and low PEEP



ΔPes: surrogate of inspiratory pressure, DP: driving pressure, TDP: transpulmonary driving pressure

High PEEP caused variable recruitment and systematic redistribution of tidal volume toward dorsal lung regions, thereby reducing dynamic strain in ventral areas.

High PEEP may mitigate the risk of self-inflicted lung injury solely if it improves respiratory system compliance in patients with ARDS with intense inspiratory effort.

Grieco DL, et al. *CHEST* June 2024 | @journal_CHEST | https://doi.org/10.1016/j.chest.2024.01.040