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EFFECT OF RMT BY INSPIRATORY MUSCLE STRENGTH TRAINING ON FAILURE TO WEAN

Ten to 15% of patients on mechanical ventilation experience failure to wean (FTW), which leads to diaphragm weakness and potentially worsens their clinical outcome. Reduced respiratory muscle strength is a significant contributor to FTW. It is therefore important to understand how respiratory muscle strength can be improved in order to help ensure that patients will be able to successfully be weaned from mechanical ventilation and continue to live their lives with a high quality of life.

In this blog post, we're taking a look at a study that tested inspiratory muscle strength training (IMST) on respiratory muscle strength and looks at how it affects the weaning outcome of FTW patients.

Key Findings

- Respiratory muscle weakness contributes to failure to wean (FTW) from mechanical ventilation.
- 10% to 15% of patients experience FTW, which leads to diaphragm weakness and worse clinical outcome.
- Up to 3 weeks of respiratory muscle training (RMT) improved weaning success from 47% to 71% of patients due to increased respiratory muscle strength.

Patient Impact

RMT by IMST effectively improves weaning success after mechanical ventilation.

Study Methods

Patients on mechanical ventilation received IMST for up to three weeks, or until weaning. Respiratory muscle strength was measured by maximal inspiratory pressure (MIP) Regular breathing trials were performed to assess the patient's ability for unaided breathing. 72 hours of breathing without MV was considered as successful weaning.

Study Results

Patients who received IMST showed a significant improvement in MIP and had a significantly higher weaning success rate than the control group (71% and 47%, respectively).
Respiratory muscle training by IMST significantly increases the chances of successful weaning of mechanical ventilation. It is a clinically practical and safe method to improve weaning outcome.

References

Martin AD, et al. Inspiratory muscle strength training improves weaning outcome in failure to wean patients: a randomized trial.Crit Care. 2011;15(2):R84.