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Early mobilization improves muscle force in mechanically ventilated patients: A randomized controlled trailChiu Hua Wang¹, Woung Ru Tang¹, Suh Hwa Maa² and Ju Li³¹Chang Gung University, Taiwan²National Taitung University, Taiwan³Cardinal Tien College of Healthcare and Management, Taiwan

Aim: Early mobilization has been shown to improve muscle force and walking distance in patients with mechanical ventilation, but the benefits to muscle force have not been fully evaluated. This study investigated the effects of early mobilization on muscle force in stable patients with acute respiratory failure receiving mechanical ventilation.

Method: 87 stable patients with acute respiratory failure who have been on mechanical ventilation first time for at least 96 hours were enrolled. Patients were randomly assigned to receive early mobilization in addition to standard care (n=42) or standard care alone (n=45). The manual limb muscle force measurements including isometric anterior deltoid, pectoralis major and quadriceps femoris strength was assessed at day 11 of the study. Successful extubation, the number of ventilator days, ICU stay and hospital stay were recorded at hospital discharge. The effects were evaluated using on-treatment approaches by Generalized Estimating Equations (GEE) method's multiple linear regression models and GEE method's logistic regression.

Results: The limb muscle force scores improved over time for the experimental group (all p<0.05) when compared with the controls after adjustment for covariates (group, time and baseline values). For experimental group, the successful extubation odds ratio was 7.45 times higher than control group patients (p=0.004) after adjustment for the covariates of age and APACHE score. Other variables did not differ between the experimental group and the standard care alone.

Conclusions: Patients with acute respiratory failure undergoing mechanical ventilation experienced clinically, significant improvement in limb muscle force when their standard care was supplemented with early mobilization

Biography

Chiu-Hua Wang has more than 10 years of experience in Acute and Critical Care. She completed her BS in Nursing and MSN Degree at Chang Gung University. Her research interest focuses on "The effect of nursing intervention on critically ill patients, including early mobilization and nursing education".

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