EFFECTS OF INDIVIDUALIZED PHYSICAL THERAPY INTERVENTION ON QUALITY OF LIFE AND FUNCTIONAL LEVEL OF VENTILATOR-DEPENDENT PATIENTS

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Abstract

Background and purpose: Physical therapy intervention is an integral part in the management of ventilator-dependent patients to prevent further complications related to deconditioning. However, there were few studies focused on this field in Taiwan. This case report described physical therapy interventions and their effects for two ventilator-dependent patients.

Case Description: Two ventilator-dependent patients, one with amyotrophic lateral sclerosis (ALS) (case 1) and the other with chronic obstructive pulmonary disease (COPD) (case 2), were recruited from the respiratory care ward of a teaching hospital. Both cases received a 6-week individualized physical therapy intervention, which included airway clearance techniques, low-intensity peripheral muscle exercise, as well as transfer and ambulation training (exercise intensity was dyspnea to Borg scale 4-5).

Results: Both cases showed improvement in bronchial hygiene. In case 1, the collapsed left lower lobe was re-opened with decreased sputum amount and needs for sputum suctioning. For case 2, although sputum amount was not changed but decreased needs for sputum suctioning and increased cough efficiency were noticed. Pulmonary function was not changed after intervention for both cases, but case 2 could tolerate without ventilator in the daytime. The two-minute walking distance (2MWD) of both cases increased, from "can't measure" to 52.5 m and to 82.5 m in case 1 and 2, respectively. Functional level and quality of life were improved in both cases after intervention. For case 1, scores increased from 35 to 55 for Barthel Index (BI), 23 to 32 for motor domain of Functional Independent Measure (FIM), 16 to 21 for physical domain of Short-form 36 (SF-36), and 32 to 37 for mental domain of SF-36. As for case 2, scores increased from 55 to 80 for BI, 29 to 65 for motor domain of FIM, physical domain of SF-36 remained unchanged as 14, and mental domain of SF-36 increased from 41 to 45.

Conclusion: Physical therapy intervention could improve bronchial hygiene, 2MWD, functional level and quality of life in ventilator-dependent patients and might help these patients to wean off the ventilator. In this patient group, individualized training programs that include chest physical therapy and task-oriented activity training should be emphasized.

Key words: Physical therapy, Ventilator-dependent patient, Amyotrophic lateral sclerosis, Chronic obstructive pulmonary disease

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