Feasibility of physical and occupational therapy beginning from initiation of mechanical ventilation


Introduction
Patients who are receiving mechanical ventilation are at risk for severe and chronic morbidities. While some ICUs have a protocol for PT/OT in critically ill patients, few studies have been done to show the safety and feasibility of doing so.

Purpose
The purpose of this study was to describe a protocol of daily sedative interruption and early physical and occupational therapy and to specify details of intensive care unit-based therapy.

Methods
Subjects = 49 mechanically ventilated patients with a mean age of 57.7 years old. The subjects were 59% female, as well as 61% African American.

Inclusion Criteria: Age ≥ 18 years old, ventilated for >72 hours with an expected 24 hours of ventilatory support, and baseline functional independence.

Exclusion Criteria: Rapidly evolving neuromuscular disease, admission after cardiopulmonary arrest, diagnosis of irreversible condition with 6-month mortality estimated at >50%, elevated intracranial pressure, multiple absent limbs, or enrollment in another trial.

Methods (continued)
Treatment:
• Delivered by a physical and occupational therapist
• Upon passing assessment each morning and demonstrating “wakefulness,” patients were placed on protocol for daily sedative interruption and early PT/OT.
• PROM exercises on all four limbs if patient remained unresponsive after sedative interruption.
• Therapy was stopped if any contraindications were met.
Activities performed:
• Active or active-assisted ROM
• Bed mobility exercises
• Sitting balance activities
• Activity of daily living training
• Transfers out of bed
• Standing balance and tolerance
• Ambulation

Results
• Patients generally accomplished a greater percentage of activities and required less assistance as they progressed from mechanically ventilated, to extubated in the ICU, to the medical ward.

Discussion
Sedated, mechanically ventilated patients can routinely undergo PT/OT from the onset of mechanical ventilation while in a medical ICU. This study proved that PT/OT from the onset of mechanical ventilation is feasible.

Clinical Significance
This study was one of the first to look at the feasibility and safety of such early intervention. Because this study found improvement in functional and neurocognitive outcomes and a shorter length of mechanical ventilation, physical therapists can use this information to start therapy earlier with patients on mechanical ventilation.

Conclusion
Starting PT and OT upon initiation of mechanical ventilation is feasible and safe. Protocols directed at sedative interruptions with subsequent PT/OT can be implemented successfully in medical ICUs.

Summary
While one of the articles does not agree with the other two, there is evidence that physical therapy is feasible and safe with patients on mechanical ventilation. Patients receiving therapy improved in areas such as duration of ventilation and functional outcomes. Physical therapists can use this research to initiate therapy with mechanically ventilated patients earlier in order to give them the best possible outcome.

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