TryCYCLE: Preliminary results of early in-bed cycling with mechanically ventilated patients

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Introduction:

Randomized clinical trials (RCTs) showed that (1) rehabilitation started within 1.5 days of mechanical ventilation (MV) and (2) in-bed cycling started 2 weeks after ICU admission improves function at hospital discharge. However, the effect of in-bed cycling started earlier in the ICU stay is unknown. The objective of this study is to assess the feasibility and safety of early in-bed cycling during MV.

Methods:

In this prospective cohort study in a medical-surgical ICU, we enrol adult patients who are

mechanically ventilated ≤ 4 days and who ambulated independently pre-ICU. We offer 30 minutes of in-bed supine cycling 6 days/week throughout their ICU stay. Outcomes: (1) Feasibility: (i) Consent rate and (ii) Intervention delivery; (2) Safety: (i) Events prompting cycling termination and (ii) inadvertent catheter/tube dislodgements. Clinicaltrials.gov: NCT01885442

Results:

From 10/2013-7/2014, we enrolled 29 of the target sample size of 33 patients; herein we report results from 22 patients who reached hospital discharge. Their age was [mean (SD)] 67.2(11.9) years and APACHE II score was 24.2(7.6). Most 12(55%) were female, and had medical conditions 20(91%). Time from ICU admission to 1st cycling was [median (IQR)] 2.5 (2,4) days. Our consent rate was 29/32(91%). Patients received [median (IQR)] 4.5(2,8) in-bed cycling sessions (total 122), while receiving the following interventions: MV, 91(75%); vasopressors, 6(5%); sedative/analgesic infusions, 43(35%); and dialysis 2(2%). The duration of cycling sessions was [median (IQR)] 30.7 (21.6,30.8) minutes and distance cycled was 1.08 (0.93,3.05) kilometers. Active cycling occurred in 98(80%) sessions. Only 1(0.8%) session stopped due to safety concerns; no device dislodgements occurred.

Conclusions:

Preliminary data suggest that early supine cycling among MV patients is feasible and safe. Final results from TryCYCLE will inform the design of a multicentre pilot RCT of early in-bed cycling in critically ill MV patients.

General Classification:

Clinical Research

Patient Type:

Adult

Categories - Abstracts:

Patient and Family Support

Keywords:

mechanical ventilation

rehabilitation