Introduction/ Hypothesis

The objective of this quality initiative is to assess the impact of early mobility on mechanically-ventilated patients. Outcomes assessed included ventilator (O:E) ratio, ICU LOS (O:E) ratio, and ICU mortality. This is a 16-month follow-up assessment.

Methods

We identified patients admitted to the intensive care unit who were mechanically ventilated for more than 24 hours to determine if they met criteria for the early mobility protocol. The protocol coupled the SAT (spontaneous awakening trial) and SBT (spontaneous breathing trial) to incorporate active exercise. This included sitting up, legs dangling at side of bed, standing up and ambulation. The degree of mobilization was patient dependent, and was chosen based on assessment by the physical therapist. The physical and occupational therapy staff mobilized patients after the SBT. Patients who were extubated after the SBT were mobilized later in the day. The emphasis of the protocol was early mobilization of ventilated patients. A communication board was maintained in the ICU, identifying patients to be mobilized.

Results

In the 6 months prior to initiation of the protocol, 2% of mechanically ventilated patients underwent mobility. In the 16 months following commencement, the rate of mobility rose to an average of 59%. These interventions resulted in a significant improvement in the number of ventilator days and ICU LOS. The O:E ratio for ventilator days decreased significantly from 1.30 in 2015 to 1.19 in 2016 (p=0.115) and 1.01 in 2017 (p=0.037). The O:E ratio for ICU LOS also improved significantly from 0.83 in 2015 to 0.77 in 2016 (p=0.048), decreasing further to 0.68 in 2017 (p=0.035). There was a trend towards reduced mortality (O: E ratio in 2015 1.12, decreased to 0.99 in 2016) but this change did not meet statistical significance.

Conclusion

The use of protocolized ICU mobility, coupled with daily SAT and SBT resulted in a significant improvement in both ventilator days and ICU LOS. The impact on mortality was not statistically significant but there was a trend towards improvement. This project serves as a foundation for a future study to delineate the subset of vented patients that may benefit the most from early mobility, with a goal to assess long term outcomes such as functional status and mortality.

Impact of Early Mobility on Mechanically Ventilated Patients - A 16-month Follow-up

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