ICU
MANAGEMENT & PRACTICE

Mechanical Ventilation Linked to Long-Term Disability

Prolonged mechanical ventilation poses a significant impact on the long-term well-being of patients. In a study of critically ill patients who had been mechanically ventilated for more than seven days, researchers found that the subjects were at greater risk for functional impairment and mortality at one year following discharge from the intensive care unit (ICU).

"In our study of nearly 400 ICU patients, we were able to identify a number of characteristics that predicted subsequent disability," said lead author Margaret Herridge, MD, MPH, of the University of Toronto. "Knowing these risk factors can help guide their rehabilitation needs." The study was presented at the 2015 American Thoracic Society International Conference in Denver, Colorado.

Dr. Herridge and colleagues examined data of 391 patients who had undergone at least one week of mechanical ventilation. Median ventilation time was 16 days, mean length of stay in the ICU was 22 days, and mean length of stay in the hospital was 29 days. Assessment included the Functional Independence Measure (FIM), an indicator of disability level, along with measures of physical capacity, neuropsychological status, quality of life, healthcare utilisation, and mortality.

Based on their analysis, the researchers noted that FIM score at seven days post-ICU discharge was associated with patient age and length of stay in the ICU, such that the oldest patients with the longest ICU stays had the worst outcomes:

- 40 patients of those patients aged 46-66 years with an ICU length of stay of 14 days or more died within the first year of follow-up, 29 percent were readmitted to ICU, and most exhibited severe impairments in daily activities, including bathing, dressing and climbing stairs.
- In contrast, patients younger than 42 years of age with an ICU length of stay of less than two weeks had the best functional outcomes.

In addition, the rate of hospital readmission was high for all patients, ranging from 36 percent to 43 percent for different age and length of stay patient groups. FIM score, Charlson score (a measure of comorbidities), and age independently predicted mortality at one year, according to the research team.

"A combination of FIM score at seven days after ICU discharge, length of stay in the ICU, and patient age can be used to predict subsequent impairment in mechanically ventilated patients," Dr. Herridge pointed out. "Earlier intervention based on these predictions may improve outcomes for these high-risk patients."

Source: American Thoracic Society (ATS)
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