News Release

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Music Helps Patients Undergoing Daily Weaning From Prolonged Mechanical Ventilation

ATS 2015, DENVER—Patient-selected music during weaning from prolonged mechanical ventilation could benefit patients by decreasing their heart rate and anxiety, according to a study presented at the 2015 American Thoracic Society International Conference.

Patients on prolonged mechanical ventilation may feel stress or insecurity during daily weaning trials because they do not have support from the ventilator. “Having patients listen to music during these trials may help reduce stress and speed up extubation,” said lead author Zhan Liang, a PhD candidate at the University of Pittsburgh in Pennsylvania.

The study’s outcome measures were mean blood pressure, heart rate, respiratory rate, blood oxygen saturation level (SpO_2), anxiety, dyspnea, and weaning time (hours) during daily weaning trials.

Researchers recruited 28 subjects from a long-term acute care hospital and randomized subjects into two music intervention orders for 6 days during their weaning trials. Both orders involved listening to music every other day via a headset, with the “off” days having no music.

Subjects included in the study were on mechanical ventilation for more than 4 days, were undergoing daily weaning trials, had no hearing impairment, were at least 21 years old, and had no evidence of delirium.

During weaning trials on music days, researchers began to track outcome measures for 30 minutes; after that, patients listened to their selected music for 60 minutes. On nonmusic days, data were collected for 90 minutes.

The mean patient age was 62.5 years old, and 79% were male. The mean Acute Physiology and Chronic Health Evaluation III score was 48.3, and the mean long-term acute care hospital length of stay was 38.9 days.

On music days, subjects had significant decreases in heart rate, respiratory rate, anxiety, and dyspnea pre- and post-music intervention. There were no significant decreases in SpO_2 or mean blood pressure. On nonmusic days, no significant changes occurred with the variables. When researchers compared the three music days with the three nonmusic days, there were significant decreases in respiratory rate, anxiety, dyspnea, and a significant increase in daily weaning time, but not heart rate, SpO_2, or mean blood pressure.

“Further study is indicated to test benefits in a larger sample and earlier in the weaning process.” the researchers concluded.

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** Please note that numbers in this release may differ slightly from those in the abstract. Many of these investigations are ongoing; the release represents the most up-to-date data available at press time.*

Abstract 62728

Effect of Music Intervention During Daily Weaning Trials in Patients on Prolonged Mechanical Ventilation
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04.15 - Ventilation: Weaning (CC)
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Abstract Body

Rationale: For patients on prolonged mechanical ventilation (PMV), daily weaning trials can be stressful due to insecurity from not having support from the ventilator. Having patients listen to their choice of music during daily weaning trials may be a simple means of reducing stress and therefore hastening extubation.

Purpose: To describe the effect of a music intervention on mean blood pressure [MBP], heart rate [HR], respiratory rate [RR], SpO_2, anxiety, dyspnea and weaning time (hours) during daily weaning trials.

Methods: Using a prospective crossover pre-post repeated measures design, 28 subjects were recruited from a long term acute care hospital (LTACH) and randomized into 2 music intervention orders for 6 days during their scheduled weaning trials: 1) Order 1 = music (Day 1), no music (Day 2), music (Day 3), etc. and 2) Order 2 = no music (Day 1), music (Day 2), no music (Day 3) etc. Inclusion criteria were: 1) on mechanical ventilation for > 4 days; 2) undergoing daily weaning trials; 3) no hearing impairment; 4) at least 21 years of age; and 5) no evidence of delirium. On music days, we began obtaining outcome measures 30 minutes prior to the weaning trial; then applied a headset with patient selected/preferred music for 60 minutes during the weaning trial (total 90 minutes). On non-music days, data were collected for 90 minutes. Outcome measures included MBP, HR, RR, SpO_2, anxiety and dyspnea (visual analog scale, 0 [None] – 100 [extremely anxious or short of breath]) and weaning time (hours). Data were analyzed using paired t-tests.

Results: Patients were 62.5 (SD=10.1) years, 78.6% male with an APACHE III score of 48.3 (SD=13.4) and LTACH length of stay of 38.9 (SD=22.0) days. When comparisons were made pre and post intervention on music days, there were significant decreases in HR ($p<0.01$), RR ($p<0.01$), anxiety ($p<0.01$), and dyspnea ($p<0.01$), but not SpO_2 or MBP. There were no significant changes for the above variables on non-music days. When comparisons were made between mean values for the 3 music and 3 non-music days, there were significant decreases in RR ($p<0.01$), anxiety ($p<0.01$), dyspnea ($p<0.01$) and total weaning time ($p=0.02$), but not HR, SpO_2 or MBP.

Conclusion: Providing patient selected music during weaning from PMV is a simple, potentially beneficial alternative nursing intervention. Further study is indicated to test benefits in a larger sample and earlier in the weaning process.