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High-frequency chest wall oscillation in ALS: an exploratory randomized, controlled trial.

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Source

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Abstract

OBJECTIVES:

To evaluate changes in respiratory function in patients with ALS after using high-frequency chest wall oscillation (HFCWO).

METHODS:

This was a 12-week randomized, controlled trial of HFCWO in patients with probable or definite ALS, an Amyotrophic Lateral Sclerosis Functional Rating Scale respiratory subscale score $<$ or $=$ 11 and $>$ or $=$ 5, and forced vital capacity (FVC) $>$ or $=$ 40% predicted.

RESULTS:

We enrolled 46 patients (58.0 \pm 9.8 years; 21 men, 25 women); 22 used HFCWO and 24 were untreated. Thirty-five completed the trial: 19 used HFCWO and 16 untreated. HFCWO users had less breathlessness ($p = 0.021$) and coughed more at night ($p = 0.048$) at 12 weeks compared to baseline. At 12 weeks, HFCWO users reported a decline in breathlessness ($p = 0.048$); nonusers reported more noise when breathing ($p = 0.027$). There were no significant differences in FVC change, peak expiratory flow, capnography, oxygen saturation, fatigue, or transitional dyspnea index. When patients with FVC between 40 and 70% predicted were analyzed, FVC showed a significant mean decrease in untreated patients but not in HFCWO patients; HFCWO patients had significantly less increased fatigue and breathlessness. Satisfaction with HFCWO was 79%.

CONCLUSION:

High-frequency chest wall oscillation was well tolerated, considered helpful by a majority of patients, and decreased symptoms of breathlessness. In patients with impaired breathing, high-frequency chest wall oscillation decreased fatigue and showed a trend toward slowing the decline of forced vital capacity.

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