primary studies - published RCT

Non-invasive ventilation used as an adjunct to airway clearance treatments improves lung function during an acute exacerbation of cystic fibrosis: a randomised trial.

Code: PM26096013 **Year:** 2015 **Date:** 2015 **Author:** Dwyer TJ

Study design (if review, criteria of inclusion for studies)

Randomised controlled trial

Participants

Forty adults with moderate to severe cystic fibrosis lung disease and who were admitted to hospital for an acute exacerbation.

Interventions

Comprehensive inpatient care (control group) compared to the same care with the addition of non-invasive ventilation during airway clearance treatments from Day 2 of admission until discharge (experimental group).

Outcome measures

Lung function and subjective symptom severity were measured daily. Fatigue was measured at admission and discharge on the Schwartz Fatigue Scale from 7 (no fatigue) to 63 (worst fatigue) points. Quality of life and exercise capacity were also measured at admission and discharge. Length of admission and time to next hospital admission were recorded.

Main results

Analysed as the primary outcome, the experimental group had a greater rate of improvement in forced expiratory volume in 1 second (FEV1) than the control group, but this was not statistically significant (MD 0.13% predicted per day, 95% CI -0.03 to 0.28). However, the experimental group had a significantly higher FEV1 at discharge than the control group (MD 4.2% predicted, 95% CI 0.1 to 8.3). The experimental group reported significantly lower levels of fatigue on the Schwartz fatigue scale at discharge than the control group (MD 6 points, 95% CI 1 to 11). There was no significant difference between the experimental and control groups in subjective symptom severity, quality of life, exercise capacity, length of hospital admission or time to next hospital admission.

Authors' conclusions

Among people hospitalised for an acute exacerbation of cystic fibrosis, the use of non-invasive ventilation as an adjunct to the airway clearance regimen significantly improves FEV1 and fatigue.

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See also

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Keywords

non pharmacological intervention - devices OR physiotherapy; Ventilators; Ventilators- Mechanical; Exacerbation; Respiratory Tract Infections; Respiratory Tract Diseases; Infection; Bacterial Infections; Artificial Ventilation; Chest physiotherapy; Adult; Airway clearance technique;