primary studies - published RCT

The effects of postural drainage and positive expiratory pressure physiotherapy on tracheobronchial clearance in cystic fibrosis.

Code: PM1935294 **Year:** 1991 **Date:** 1991 **Author:** Mortensen J

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

Cross-over design. Randomised controlled trial.

Participants

10 participants (6 males); mean age was 20 years, range 15 - 26 years; mean FEV1 38.5, range 26 - 101% predicted. Participants entered the study in the last 2 weeks of regular hospital admission for intravenous anti-pseudomonas treatment. CF diagnosis and chronic pseudomonas infection.

Interventions

1. PEP treatment. Pressure 15 - 20 cm H2O using a mask. Seated participants breathed deeply for one minute, followed by 1 - 2 forced expirations from mid to low lung volume, relaxed breathing and cough. This breathing regimen was repeated for 20 minutes; 2. Breathing exercises in postural drainage positions (BEpd). Participants breathed deeply 4 times followed by relaxed breathing for 10 minutes in each of right and left side lying with 20 degrees head down tilt. relaxed breathing were performed. This was 3. Control (CONT). 20 minutes of resting in sitting with spontaneous coughing allowed.

Outcome measures

Mucus clearance was measured directly by delivering a radioaerosol (99mTc-labelled albumin colloid) to the airways and then measuring the distribution of radiolabelled secretions within the lung fields. Posterior planar gamma camera images of the thorax

Main results

There was no significant difference in whole lung or regional TBC between the PD + FET and PEP + FET treatments. The correlations between TBC and the radioactivity content in sputum expectorated (rs2 = 0.76) and between TBC and numbers of coughs (rs2 = 0.65) were better than between TBC and the weight of sputum expectorated (Rs = 0.39). PD or PEP when combined with FET have similar effects on short-term whole lung and regional TBC in patients with cystic fibrosis. Evaluation of TBC during chest physiotherapy when only based on the weight of sputum expectorated seems inadequate.

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See also

Chest. 1991 Nov;100(5):1350-7.

Keywords

Adolescent; Adult; Airway clearance technique; Drainage; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; Postural Drainage; Positive-Pressure Respiration- PEP- pep mask; Airway clearance drugs -expectorants- mucolytic- mucociliary-; exercise; Chest physiotherapy; forced expiration technique; Active Cycle of Breathing Technique -ACBT-;