Effectiveness of Treatment with HFCWO in patients with Bronchiectasis

Overview

High Frequency Chest Wall Oscillation provides an improvement both in pulmonary function and quality of life in patients with chronic hyper-secretive Bronchiectasis. Since those patients need daily airway clearance, HFCWO should be included among the principal options in Chest Physiotherapy.

Nicolini, et al. study1

The aim of the study was to find the more efficacious treatment in patients with Bronchiectasis.

The intent of the study was to measure:
- Breathlessness & Quality of Life (QOL)
- Respiratory Lung Function
- Sputum Production
- Sputum Cellularity

It incorporated traditional techniques of Chest Physiotherapy (CPT) vs. High Frequency Chest Wall Oscillation (HFCWO) in patients with Bronchiectasis.

15 day Randomized Control Trial (RCT) used computer randomization to divide patients into three groups:
- Medical Therapy Only, as prescribed
- CPT/PEP – 45 mins/ session, twice daily
- HFCWO – 30 mins/ session, twice daily

Patients showed significant improvement in Dyspnea and Quality of Life (QOL) with HFCWO

Breathlessness, Cough & Sputum Score (BCSS)

HFCWO showed a significant improvement in BCSS (p≤ 0.001) and CAT (p≤ 0.001)

HFCWO

The Vest® Airway Clearance System by Hill-Rom®
Bronchiectasis Patients showed significant improvement in Respiratory Function with HFCWO vs PEP/CPT

**Improvement observed in markers of inflammation**

- HFCWO group showed a significant reduction of blood inflammatory parameter C-Reactive Protein, compared to the PEP/CPT group ($p \leq 0.019$).

- HFCWO showed a significant reduction of neutrophils percentage in sputum ($p \leq 0.002$).

- HFCWO also produced a significant difference in sputum volume at the end of treatment from $52.0 \pm 16.9$ ml to $72.5 \pm 24.0$ ml ($p \geq 0.011$).

---