



Feasibility and safety evaluation of Simeox airway clearance technique (ACT) in patients with bronchiectasis

Vitezslav Kolek, Petr Jakubec, Jana Doleželová, Laurent Morin, Jiří Kufa

European Respiratory Journal 2019 54: PA601; DOI: 10.1183/13993003.congress-2019.PA601

Article

Info & Metrics

Abstract

Introduction: ACTs improve bronchial drainage in various obstructive lung diseases with sticky and viscid mucus. Patients with bronchiectasis are a good indication for airway clearance therapy but new techniques required to be evaluated.

Aim: Goal of this pilot study was to assess feasibility and safety of an innovative ACT compared to manual chest physiotherapy (CPT) for airway clearance management of hospitalized patients suffering from bronchiectasis.

Methods: Patients with bronchiectasis were randomized to CPT or a new device (Simeox, Physio-Assist) facilitating mucus clearance by generating successive and intermittent intrapulmonary negative air pressure during relaxed exhalation, and treated for 5 days (2 sessions of 20 min each per day). Pulmonary function test, chest expansion, mucus collection and SpO₂ were performed before and after procedure.

Results: 12 patients randomized 1:1 (7 CF, 3 COPD, 2 IPF). After 5 days of therapy, there was a similar trend in FEV₁% and total sputum production improvement between Simeox (+2.5%; +143ml) and CPT (+1.5%; +30ml). Chest expansion and SpO₂ increased significantly to a similar extent in both groups. A longitudinal rise of SpO₂ pre-therapy leading to less SpO₂ fluctuations was observed during the 5 days in the device group only ($R^2=0.705$; $p = 0.002$), suggesting a persistent effect of therapy.

The device was well tolerated and no safety signal was detected. Patients appreciated the device and found it comfortable.

Conclusions: This study showed non-inferiority of device procedure compared to CPT. Simeox ACT was considered safe and feasible for airway clearance management during hospitalization of different lung diseases with mucus retention

[Chronic diseases](#) [Physiotherapy care](#) [Airway management](#)

Footnotes

Cite this article as: European Respiratory Journal 2019; 54: Suppl. 63, PA601.

This is an ERS International Congress abstract. No full-text version is available. Further material to accompany this abstract may be available at www.ers-education.org (ERS member access only).

Copyright ©the authors 2019

We recommend

Late Breaking Abstract - Effects of a new Airway Clearance Technology versus manual physiotherapy in COPD

Florin Mihaltan et al., European Respiratory Journal, 2018

Late Breaking Abstract - Benefits of a low-frequency airway clearance technology in non-CF patients with bronchiectasis

Katarzyna Iwan et al., European Respiratory Journal, 2018

Feasibility and benefits of an innovative airway clearance device in COPD patients hospitalized for acute exacerbation

Ivan Solovic et al., European Respiratory Journal, 2020

Effectiveness of a mobile HFCWO device for airway clearance: impact on hyperinflation

Glenn Leemans et al., European Respiratory Journal, 2019

ELTGOL airway clearance in bronchiectasis: laying the bricks of evidence

Conroy Wong et al., European Respiratory Journal, 2018

Massive haemoptysis and ventilatory failure in pregnancy

William G Flight et al., Thorax, 2019

THU0616-HPR EXPIRATORY FLOW ACCELERATOR (EFA) IN SYSTEMIC SCLEROSIS PATIENTS WITH MUCUS HYPERSECRETION, PRODUCTIVE COUGH AND DYSPNOEA: PRELIMINARY RESULTS FROM A HOME-BASED AIRWAY CLEARANCE TECHNIQUE DAILY PROGRAM

S. Faverzani et al., Ann Rheum Dis, 2020

Environmental Disturbances Decrease the Variability of Microbial Populations within Periphyton [video content]

Cristina M. Herren, mSystems, 2016

Randomised cross-over trial evaluating the short-term effects of non-invasive ventilation as an adjunct to airway clearance techniques in adults with cystic fibrosis

Gemma Stanford et al., Open Resp Res, 2019

Investigating outcome measures for assessing airway clearance techniques in adults with cystic fibrosis: protocol of a single-centre randomised controlled crossover trial

Gemma Stanford et al., Open Resp Res, 2020