



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

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Article

Info & Metrics

## Abstract

**Introduction:** Airway clearance devices (ACDs) may improve symptoms and lung function in Chronic Obstructive Pulmonary Disease (COPD) with mucus hyperproduction or bronchiectasis but innovation needs to be evaluated.

**Aim:** Aim of study was to assess feasibility and effects of a new ACD in hospitalized COPD patients suffering from chest congestion despite optimal medical treatment.

**Methods:** 32 patients with AECOPD and symptoms of excessive mucus congestion were treated during 6 days with medical treatment, pulmonary rehabilitation and airway clearance with either manual chest physiotherapy (control; n=13) or new ACD (Simeox, Physio-Assist; n=19) that facilitates bronchial drainage by generating pulses of negative air pressure during relaxed exhalations. Usability, spirometry, CAT score, safety and tolerance were evaluated.

**Results:** Baseline: age 67.3 6.7, 69% male, GOLD 2/3/4: 19%/31%/50%, GOLD B/C/D: 3%/19%/78%, 31% bronchiectasis (BE), 66% had ICS/LABA/LAMA, CAT score 29.0±3.3.

Patient training required 15 min during the first session. No adverse event nor pain was reported. FEV1 increased by 19±10% and 14±5% in device and control group (NS), respectively. However, improvement of CAT score was higher in device group (-34±9% vs control: -24±4%; p<0.001). FEV1 increase was higher in very

severe COPD treated with device (+24±10% vs control: +15±5%,  $p<0.05$ ). COPD with bronchiectasis benefited the most from device therapy (FEV1: +28±6%, CAT -38±9%).

**Conclusion:** These results confirmed the feasibility of this new technology to manage mucus problems in COPD and suggested that it may contribute to improve respiratory symptoms and quality of life in the most severe patients

[Bronchiectasis](#)   [COPD - management](#)   [Physiotherapy care](#)

## Footnotes

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