

## Targeted Lung Denervation improves COPD symptoms and health related quality of life at 6-months

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Background: Targeted Lung Denervation (TLD) is a bronchoscopic therapy that ablates parasympathetic pulmonary nerves to induce anticholinergic action in COPD.

Aim: To evaluate safety and efficacy after TLD in patients with mild to moderate COPD.

Methods: Bilateral TLD was performed in patients with COPD (FEV1/FVC<70%; FEV1 30-60% predicted) using a novel second-generation lung denervation system (Nuvaيرا, Inc., USA) with esophageal visualization in a prospective study (NCT02058459). Safety was evaluated by collecting all adverse events (AEs) through 6 months and bronchoscopic inspection at 3 months. Efficacy measures included pulmonary function testing, CAT and SGRQ-C questionnaires.

Results: 16 patients (10F/6M, 63.5+5.6 years, FEV1 31.6+5.6%) underwent TLD. Four post treatment serious AEs were reported in 1 patient (cough, bronchial infection, chest pain, and tendonitis). 6-month FEV1 %predicted (off bronchodilators) was similar to baseline pre TLD (on tiotropium). CAT and SGRQ-C significantly (both p<0.05) improved in 92% and 64% of patients compared to baseline (see Figure).

Conclusion: TLD is feasible and safe using esophageal visualization and demonstrates improvement in symptoms and health related quality of life in patients with COPD compared to inhaled anticholinergic maintenance therapy. TLD shows similar lung function improvements compared to tiotropium, confirming the anticholinergic mechanism of action.

