

[9:30 am] Changes in Regional Lung Volumes after Bronchoscopic Treatment of Severe Emphysema with Bronchial Valves: Clinical and Quantitative CT Scan Correlation, [Publication Page: A811]

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RATIONALE: The purpose of this study was to correlate clinical outcome measures with objective quantification of regional lung volumes in subjects with severe upper-lobe predominant emphysema who underwent treatment using bronchial valves.

METHODS: CT scan data from 36 subjects with severe emphysema were obtained from 8 North American clinical trial sites. All studies were performed with proper IRB approvals and consent. IBV[®] Valves were placed to occlude 6.2 ± 1.4 segmental bronchi in the right and left upper lobes using a flexible bronchoscope. Subjects were assessed for health status (SGRQ), pulmonary function (PFT), and exercise capacity following ATS guidelines. CT scans were analyzed at baseline and 3 or 6 months after treatment. Total and lobar lung density, volume, mass, and air volume were assessed using custom software (EmphyxJ).

RESULTS: The baseline values (mean \pm SD) included TLC 7.6 ± 1.4 , RV 4.8 ± 1.0 , FEV₁ 0.84 ± 0.21 , DLCO 9.2 ± 2.9 , and SGRQ 55.0 ± 10.8 . Total lung volumes by QCT and PFT strongly correlated ($R^2 = 0.74$) and did not change with treatment. The treated upper lobes decreased in volume in 84.4% of the cases, mean $323 \text{ mL} \pm 433$ ($p < 0.001$), or 9.6%. The untreated lobes had a 10.7% increase in volume. There were also significant shifts from treated to untreated lobes in mass and air volume. Changes in QCT did not correlate with PFT or exercise changes but did correlate ($p = 0.02$) with clinically meaningful improvements in SGRQ (-9 ± 19).

CONCLUSIONS: The health status improvements reported by subjects following treatment are associated with significant regional lung volume changes measured using QCT methodology.

Session Info: **[**]** Mini-Symposium, [D13] DYNAMIC HYPERINFLATION (DH) IN COPD: EVALUATION AND TREATMENT

Session Time: 8:15 AM - 11:00 AM

Presentation Time: 9:30 AM

Room: Room 131 (Lower Level), Moscone Center

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