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Title: Unilateral treatment with lung volume reduction coils in patients with severe emphysema

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Body: Rationale: Bronchoscopic Lung Volume Reduction Coil treatment has been successfully used in multiple European studies to improve pulmonary function, exercise capacity and quality of life in bilaterally-treated patients. Unilateral use of LVRC has thus far not been reported in a commercial setting. Aim: To evaluate whether unilateral LVRC can provide meaningful clinical improvement in severe emphysema patients. Methods: We selected patients in a severe condition (mean FEV1 0.662L, mean FVC 1.394L, mean RV 314.78%, mean 6MWT 136.25m) and treated the most severely damaged lobe as evidenced by visual CT analysis. Follow-up tests were conducted approximately 3 months following unilateral treatment. Ten LVRC were placed in one lobe. Results: The most remarkable improvements were in 6MWT (mean +57.5m) and dyspnea (mean mMRC -1.06 points from a baseline average of 3+). 6MWT was evaluable in 8 treated patients. One patient experienced 0m 6MWT improvement from a 140m baseline; the mean improvement in the other 7 patients was 65.75m, which is highly significant in this low exercise tolerance group. Mean improvement in FEV1 was +0.24L, and RV% predicted was -27%. We consider these improvements clinically significant, and are encouraged by the patients' high satisfaction with the procedure and results. We intend to offer the bilateral treatment to these patients as their condition warrants, and may consider suggesting bilateral treatment to patients who did not improve as we would have expected following the first treatment.