Use of Targeted Lobe Lung Volume Reduction with Endobronchial Valves on FEV1 Values in Patients with Severe Emphysema

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Background: Emphysema is a major leading cause of death worldwide. Traditional medical therapies are not successful in improving and maintaining lung function in patients with severe emphysema. Lung volume reduction with endobronchial valves (EBVs) has emerged as an alternative treatment for these patients.

Aim & Purpose: The purpose of this analysis is to evaluate the effect of targeted lobe complete lung volume reduction with EBVs on improving lung function in patients with severe emphysema.

Research Methods: Research was conducted using the following: PubMed, Google Scholar, and OVID. Keywords searched were "Emphysema", "COPD," "Endobronchial Valve", "Lung Reduction", and "Forced Expiratory Volume." The parameters used included human subjects and full access to text between the years 2011-2021, omitting meta-analyses and systematic reviews. Twenty-one articles met the inclusion criteria. Baseline characteristics of the 1,739 patients included average age of 65 and predominantly male patients. Results: The studies reported an average increase in FEV1 values of 0.133L at six months when targeted lobe complete lung volume reduction was achieved in patients with severe emphysema. Studies that did not achieve targeted lobe complete lung volume reduction reported a decreased or insignificant increase in FEV1 values in patients with severe emphysema.

Conclusion: Targeted lobe complete lung volume reduction with EBVs is successful in improving FEV1 values, and thus lung function, in patients with severe emphysema when compared to traditional medical therapies and incomplete lung volume reduction. Further research should be done to evaluate the effect of FEV1 values over a long term period, as well as include more female subjects in the research.

Biography

Pascal Lam is presently working at Department of Physician Assistant Studies, The University of Texas Medical Branch, and Galveston, Texas, USA

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