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Title: Endoscopic lung volume reduction (ELVR) in COPD: A comparison between two endobronchial valves systems

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Body: Introduction: Patients with severe heterogeneous emphysema, may benefit from ELVR. Aims: To compare the effects of 2 different endobronchial valve systems on lung function, exercise tolerance and quality of life. Methods: The Intra Bronchial Valve (IBV Olympus) has recently been introduced into Australia. We report on the first 8 patients undergoing IBV ELVR, and compare these results with 8 patients who underwent ELVR with the Zephyr Valve (EBV- Pulmonx) during the same period. All 16 patients had heterogeneous emphysema, complete left oblique fissures, and underwent ELVR of the left upper lobe. All had lung function, 6MWT and SGRQ pre ELVR, and at 1 and 3 months post ELVR. Results: There were no significant differences between the 2 groups (IBV vs EBV) in age [70.6(8.8) vs 68.1(6.7) yrs] or baseline FEV1 [37.5(11.3) vs 33.4(10.4) %]. The IBV group recorded significant improvements in FEV1: 1 month [11.2(8.1)% p<0.002], 3 month [17.32(11.1)% p<0.001], as did the EBV group: 1 month [17.9(8.1)% p<0.05], 3 month [21.5(23.5)% p<0.02]. There were no significant differences in FEV1 improvement between the 2 groups at 1 or 3 months. Significant improvements were also noted in 6MWT at 3 months in both groups [IBV 32.8(26.9)% p<0.001; EBV 36.9(17.4)% p<0.01]. SGRQ improved in both groups at 3 months [IBV -26.5(25.2)% p<0.001; EBV - 21.7(14.0)% p<0.001]. There were no significant differences between groups at 1 or 3 months for 6MWT or SGRQ. Conclusion: ELVR improves lung function, exercise tolerance and quality of life in carefully selected COPD patients. There were no differences in outcomes between groups.