ATELECTASIS FOLLOWING BRONCHOSCOPIC LUNG VOLUME REDUCTION (BLVR) IS ASSOCIATED WITH IMPROVED SURVIVAL IN COPD

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Background A range of bronchoscopic therapies are being developed to reduce lung volumes in COPD patients, either in order to avoid the morbidity and mortality associated with lung volume reduction surgery, or to extend therapy to patient groups in whom LVRS is not appropriate because of disease pattern or severity.

Aims Bronchoscopic lung volume reduction (BLVR), using endobronchial valves to target unilateral lobar occlusion in patients with heterogeneous emphysema has been shown to improve lung function and exercise capacity in patients with emphysema. Benefit was most pronounced in, though not confined to, patients where lobar atelectasis occurred. Little data exists on the long-term outcome following BLVR.

Study population 19 patients (16 males) FEV1 28.4 (11.9) underwent BLVR between July 2002 and February 2004. Radiological atelectasis was observed in five patients. Survival data to February 2010 was available for all patients. The age dyspnoea obstruction (ADO) score was used to calculate predicted mortality.

Results None of the patients in whom atelectasis occurred died during follow up whereas eight out of 14 in the non-atelectasis group died (χ² = 0.026) (Abstract P139 Figure 1). There was no significant difference between the groups at baseline in lung function, quality of life, exacerbation rate, exercise capacity (shuttle walk test or cycle ergometry) or CT appearances, although BMI was significantly higher in the atelectasis group 21.6 (2.9) vs 28.4 (2.9) kg m⁻² (p < 0.001). Pre treatment CT appearances did not differ significantly between the atelectasis and non-atelectasis groups in terms of degree of emphysema at either the upper or lower parts of the lungs or in heterogeneity (slope) in either the treated or non-treated lung prior to treatment. ADO score, predicted 3 year mortality was 31.1 (10.0)% in the non-atelectasis group and 32.2 (15.1)% in the atelectasis group (p = 0.8). Four of the eight deaths occurred within 3 years of the procedure, representing a 29% mortality rate for the non-atelectasis group (ie, close to that predicted).

Conclusions These data suggest that atelectasis following BLVR is associated with a survival benefit which is not explained by differences at baseline.

REFERENCE