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LUNG VOLUME REDUCTION: A LARGE-VOLUME SINGLE-CENTRE EXPERIENCE WITH AN ANALYSIS OF SEASONAL VARIATION

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Introduction and Objectives Despite available evidence and recommendation, lung volume reduction (LVR) for severe emphysema remains under-utilised, due to a perception of excessive morbidity/mortality and associated costs. There is suggestion that outcomes may be more favourable in the warmer months, however benefits of this strategy remain uninvestigated. We aimed to review short-term outcomes of our LVR programme and assess whether seasonal variations can be observed.

Methods We retrospectively reviewed data from a prospectively collected database and electronic patient records. All consecutive procedures performed by thoracoscopy (LVRS), endobronchial valves (EBV) or endobronchial coils (EBC) between 2015–2021 were considered.

Results 105 primary procedures (43 LVRS, 45 EBV, 10 EBC) were undertaken in 98 patients (M:F 58:40, median age 66, 40–84). Second-stage contralateral procedures were 3 EBC and 4 LVRS (2 planned <6months, 1 at further deterioration >3yrs later, 1 salvage after poor response to EBV).

Median length of stay (LOS) for LVRS was 8 days (6–56), with 86% discharged within 14 days. Prolonged air leak >7days was seen in 47%. Median LOS was 3 days (2–55) for EBV, 2 days (1–6) for EBC. Pneumothorax occurred in 13 EBV (29%) and 1 EBC, always within 72hrs; median LOS in this group was 12 days (6–55).

LVRS was associated with highest rate of complications (48% uncomplicated procedures vs 71% for EBV and 80% for EBC). Additional procedures were more likely required post-EBV (12 vs 2 post-LVRS) for revision/reinsertion (8), removal (3) or air leak closure (1).

Critical care admission for the whole cohort was 6.6% (4 LVRS, 2 EBV). 90-day mortality was 4% (3 after LVRS within 30-days, 1 post-EBV revision at 54-days).

Procedures were equally distributed across all seasons. Uncomplicated procedures were significantly more frequent in the summer (62%) vs winter (33%) for LVRS, but not for EBV/EBC. LOS was not significantly dissimilar in all seasons for all modalities (table 1).

Conclusions Short-term clinical outcomes suggest perceptions of excessive morbidity are invalid. A near-50% reduced complication rate of LVRS during summer vs winter is suggestive

of possible seasonal variation, which may have implications for patient selection and MDT decision-making, and should encourage further investigation on the topic.

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REDO BRONCHOSCOPY AFTER ENDOBRONCHIAL LUNG VOLUME REDUCTION – INDICATIONS AND IMPLICATIONS

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Background Endobronchial lung volume reduction (EBLVR) is an effective treatment in patients with severe emphysema. It is perceived as a low-risk, low-morbidity procedure but there is the potential for longer term complications requiring re-intervention. We have analysed our experience with revisional (redo) bronchoscopy to identify learning points for practice.

Method In a prospective cohort study of 58 patients, treated by an already experienced team, we have collected follow-up clinical data including the need, indication and outcome of redo bronchoscopy. We compared the characteristics of those requiring redo bronchoscopy with the remainder who did not.

Results 18 of 58 (31%) patients required revisional bronchoscopy at a median interval of 6 (1–13) months after the initial procedure. The indications were: lack of initial deflation 4 (22%); subsequent loss of initial deflation 12 (66%); haemoptysis 1 (6%) and secondary infection 1 (6%). The findings at redo bronchoscopy included: valve blockage 9 (52%) (5 due to mucus, 4 due to granulation) valve expectoration 5 (28%), valve leakage 2 (10%), valve colonisation 1 (5%) and 1 (5%) new development of collateral ventilation. Radiological valve anomalies were reported prior to redo bronchoscopy CT scans in only 9 of 18 (50%) cases and included: valve migration in 4, loss of volume reduction in 3 and valve blockage in 2.

Whilst pre-operative airways obstruction was higher in the redo group the only other potential risk factor for revisional bronchoscopy was lower lobe position.

Conclusion The need for revisional bronchoscopy after initial EBLVR is unpredictable but frequently required and indicates the need for close follow up and a low threshold for re-intervention on clinical grounds alone if the initial outcome is suboptimal.

Abstract S74 Table 1 Summary table of median length of stay (LOS) and rate of uncomplicated procedures, stratified by modality and season

	Total Number of Procedures	Median LOS EBV (days)	Median LOS LVRS (days)	Median LOS EBC (days)	Uncomplicated All modality (%)	Uncomplicated EBV (%)	Uncomplicated LVRS (%)	Uncomplicated EBC (%)
Spring	22	3	11.5	n/a	54.5%	66.7%	40%	n/a
Summer	29	3	5	2	69%	66.7%	61.5%	100%
Autumn	23	3	8	2	60.9%	80%	50%	75%
Winter	24	3	6	3.5	62.5%	75%	33.3%	50%