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 thoracoscopic (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 procedural were 3 EBC and 4 LVRS (2 planned <6 months, 1 at further deterioration >3 years 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 >7 days 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 72 hrs; 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.

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

<table>
<thead>
<tr>
<th></th>
<th>Total Number of Procedures</th>
<th>Median LOS (EBV days)</th>
<th>Median LOS (LVRS days)</th>
<th>Median LOS (EBC days)</th>
<th>Uncomplicated (All modality (%))</th>
<th>Uncomplicated (EBV (%))</th>
<th>Uncomplicated (LVRS (%))</th>
<th>Uncomplicated (EBC (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>22</td>
<td>3</td>
<td>11.5</td>
<td>n/a</td>
<td>54.5%</td>
<td>66.7%</td>
<td>40%</td>
<td>n/a</td>
</tr>
<tr>
<td>Summer</td>
<td>29</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>69%</td>
<td>66.7%</td>
<td>61.5%</td>
<td>100%</td>
</tr>
<tr>
<td>Autumn</td>
<td>23</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td>60.9%</td>
<td>80%</td>
<td>50%</td>
<td>75%</td>
</tr>
<tr>
<td>Winter</td>
<td>24</td>
<td>3</td>
<td>6</td>
<td>3.5</td>
<td>62.5%</td>
<td>75%</td>
<td>33.3%</td>
<td>50%</td>
</tr>
</tbody>
</table>
CHEST TRAUMA: AN EXPERIENCE OF A RESPIRATORY SUPPORT UNIT WITH LEVEL 2 CARE IN THE NORTH EAST OF ENGLAND

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Introduction Falls cause 75% of trauma in patients above 65 years of age and thoracic trauma is the second commonest injury; rib fractures are the commonest thoracic injury. There is wide variation in care. Older trauma patients are less likely to have trauma assessments. Rib fractures carry up to 12% mortality with up to 31% developing pneumonia.1 The number of fractures correlates with morbidity. Northumbria Healthcare has a team of respiratory consultants, physiotherapists, specialist nurses and anaesthetists for rib fracture management on a respiratory support unit.

Methods With Caldicott approval, basic demographics and clinical outcomes of patients admitted with thoracic trauma between Aug 20-Apr 21 were analysed. Descriptive statistical methodology was applied.

Results 119 patients were identified. Mean age was 71.1 years (range 23–97). 53 were male, 66 female. Mechanism of injury were falls from standing (65), falls down stairs/bed or in the bath (18), ladders (4), cycling (12), assault (3), road accidents (8) and 9 others (for example off horses). LOS was 7.3 days (range 1–54). 85 patients had more than 1 co-morbidity. 26 had a full trauma assessment and 75 had pan CTs. Mean number of rib fractures was 3.6. 31 (26%) had a pneumothorax and/or haemothorax. 18 chest drains were inserted (all small bore) and 1 needle aspiration done. No cardiothoracic input was required. Isolated chest trauma was present only in 45 patients. All had pain team review, 22 erector spinae catheters were inserted with 2 paravertebral blocks. 82 patients did not require oxygen, 1 required CPAP and 1 HFNC. 7 needed intensive care transfer. 20 (17%) developed pneumonias.16 (14%) deaths occurred within 30 days (1 heart failure and cancer progression, 2 Covid and 14 pneumonias)- all were in those with falls from standing. There was no correlation between number of fractured ribs, length of stay and mortality.

Conclusions High level care for thoracic trauma can be performed by the respiratory team with analgesia managed by the pain team. 42% of pneumothoraces/haemothoraces were observed. Falls from standing are associated with significant mortality and morbidity. The service is now complemented by a frailty assessment service.

REFERENCE


THE EFFECT OF SURGERY ON LUNG FUNCTION IN PATIENTS WITH IDIOPATHIC SCOLIOSIS

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Introduction Idiopathic scoliosis, the most common form of scoliosis, results in an abnormal lateral curvature of the spine. It typically affects children aged 10–16 and can result in pain and reduced respiratory function largely due to a restrictive lung defect. Treatment can involve bracing and surgical procedures and it is currently unclear how these treatments affect lung development.

Methods With Caldicott approval, basic demographics and clinical outcomes of patients admitted with thoracic trauma between Aug 20-Apr 21 were analysed. Descriptive statistical methodology was applied.

Results 119 patients were identified. Mean age was 71.1 years (range 23–97). 53 were male, 66 female. Mechanism of injury were falls from standing (65), falls down stairs/bed or in the bath (18), ladders (4), cycling (12), assault (3), road accidents (8) and 9 others (for example off horses). LOS was 7.3 days (range 1–54). 85 patients had more than 1 co-morbidity. 26 had a full trauma assessment and 75 had pan CTs. Mean number of rib fractures was 3.6. 31 (26%) had a pneumothorax and/or haemothorax. 18 chest drains were inserted (all small bore) and 1 needle aspiration done. No cardiothoracic input was required. Isolated chest trauma was present only in 45 patients. All had pain team review, 22 erector spinae catheters were inserted with 2 paravertebral blocks. 82 patients did not require oxygen, 1 required CPAP and 1 HFNC. 7 needed intensive care transfer. 20 (17%) developed pneumonias.16 (14%) deaths occurred within 30 days (1 heart failure and cancer progression, 2 Covid and 14 pneumonias)- all were in those with falls from standing. There was no correlation between number of fractured ribs, length of stay and mortality.

Conclusions High level care for thoracic trauma can be performed by the respiratory team with analgesia managed by the pain team. 42% of pneumothoraces/haemothoraces were observed. Falls from standing are associated with significant mortality and morbidity. The service is now complemented by a frailty assessment service.

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