Online Appendix A2  BTS Guideline for Pleural Disease

Section A  Spontaneous pneumothorax

Question A2  Evidence Review and Protocol

A2  What is the optimal management of patients after resolution of a first episode of pneumothorax?

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Question Evidence Review

A2 What is the optimal management of patients after resolution of a first episode of pneumothorax?

Background
Recurrence following spontaneous pneumothorax is a frequent concern. Current usual practice in the UK is to consider surgical intervention after the second episode of a spontaneous pneumothorax to reduce subsequent further recurrences. The aim of this question was to assess whether the literature supports surgical intervention at an earlier stage in an elective context, prior to the first recurrence.

Outcomes
Recurrence of pneumothorax, re-admission, the need for further pleural procedures, complications, pain/breathlessness and quality of life

Evidence review
Although 25 studies were initially identified as potentially relevant to the question, none of these studies directly compared surgical intervention versus non-surgical intervention (non-surgical pleurodesis or observation) for the treatment of adults who had resolved their first episode of pneumothorax.

Evidence statements
There was no evidence relevant to the review.

Recommendations
Due to the lack of supporting evidence, no recommendations can be made on the role of elective surgery at an earlier stage to prevent recurrence.

Good Practice Points
✓ Elective surgery may be considered for patients in whom recurrence prevention is deemed important, e.g. at risk professionals (divers, airline pilots), or those who developed a tension pneumothorax at first episode
✓ Elective surgery should be considered for patients with a second ipsilateral or first contralateral pneumothorax
✓ Discharge and activity advice should be given to all patients post pneumothorax

Research Recommendation
- There is a need for research to identify which group of patients may benefit from the elective surgical management after first episode of pneumothorax
## Question Protocol

<table>
<thead>
<tr>
<th>Field</th>
<th>Content</th>
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<tbody>
<tr>
<td>Review Question</td>
<td>What is the optimal management of patients after resolution of a first episode of pneumothorax?</td>
</tr>
<tr>
<td>Type of review question</td>
<td>Intervention review</td>
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<tr>
<td>Objective of the review</td>
<td>The objective of this question is to review the evidence for the optimal onward management of patients that have had a first episode of pneumothorax which has resolved. What is the best way to manage this group of patients?</td>
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<tr>
<td>Eligibility criteria – population / disease / condition / issue / domain</td>
<td>Adults (18+) who have resolved their first episode of pneumothorax</td>
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| Eligibility criteria – intervention(s) | Surgical pleurodesis  
Bullectomy  
(talc, pleurectomy, abrasion via surgery)                                                                                               |
| Eligibility criteria – comparators(s) | No surgery  
(non-surgical talc, observation)                                                                                                        |
| Outcomes and prioritisation  | Recurrence of pneumothorax  
Re-admission  
Need for further pleural procedures  
Complications  
Pain / breathlessness  
Quality of life                                                                                                                                |
| Eligibility criteria – study design | RCTs  
Prospective comparative studies  
Case series of >100 patients                                                                                                                   |
| Other inclusion /exclusion criteria | Non-English language excluded unless full English translation  
Conference abstracts, Cochrane reviews, systematic reviews, reviews  
Cochrane reviews and systematic reviews can be referenced in the text, but **DO NOT** use in a meta-analysis |
| Proposed sensitivity / subgroup analysis, or meta-regression | Primary pneumothorax  
Secondary pneumothorax  
Iatrogenic pneumothorax |
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<tr>
<td>Selection process – duplicate screening / selection / analysis</td>
<td>Agreement should be reached between Guideline members who are working on the question. If no agreement can be reached, a decision should be made by the Guideline co-chairs. If there is still no decision, the matter should be brought to the Guideline group and a decision will be made by consensus</td>
</tr>
</tbody>
</table>
| Data management (software) | RevMan5  
Pairwise meta-analyses  
Evidence review/considered judgement.  
Storing Guideline text, tables, figures, etc. |
|  | Grade profiler  
Quality of evidence assessment |
|  | Grade prof  
Recommendations |
| Information sources – databases and dates | MEDLINE, EMBASE, PubMed, Central Register of Controlled Trials and Cochrane Database of Systematic Reviews  
1966 - present |
| Methods for assessing bias at outcome / study level | RevMan5 intervention review template and NICE risk of bias checklist  
(follow instructions in 'BTS Guideline Process Handbook – Intervention Review') |
| Methods for quantitative analysis – combining studies and exploring (in)consistency | If 3 or more relevant studies:  
RevMan5 for meta-analysis, heterogeneity testing and forest plots  
(follow instructions in 'BTS Guideline Process Handbook – Intervention Review') |
| Meta-bias assessment – publication bias, selective reporting bias | GRADE profiler  
Intervention review quality of evidence assessment for each outcome  
(follow instructions in 'BTS Guideline Process Handbook – Intervention Review') |
| Rationale / context – what is known | We often undertake surgical intervention after the second episode of a spontaneous pneumothorax. Does the literature support surgical intervention at an earlier stage? |