

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

Field	Content
Review Question	What is the optimal management of patients after resolution of a first episode of pneumothorax?
Type of review question	Intervention review
Objective of the review	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?
Eligibility criteria – population / disease / condition / issue / domain	Adults (18+) who have resolved their first episode of pneumothorax
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
Selection process – duplicate screening / selection / analysis	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
Data management (software)	RevMan5 Pairwise meta-analyses Evidence review/considered judgement. Storing Guideline text, tables, figures, etc. Gradeprofiler Quality of evidence assessment Gradepro 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 ' <i>BTS Guideline Process Handbook – Intervention Review</i> ')
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 ' <i>BTS Guideline Process Handbook – Intervention Review</i> ')
Meta-bias assessment – publication bias, selective reporting bias	GRADEprofiler Intervention review quality of evidence assessment for each outcome (follow instructions in ' <i>BTS Guideline Process Handbook – Intervention Review</i> ')
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?