**Abstract P177 Table 1**

| | Unit cost (£) | Total Savings (+)/costs (-) for ambulatory management |
|---|---|---|
| **Bed day** | 320 | +22,400 (N = 70) |
| **Attendance at ambulatory care** | 200 | -6800 (N = 34) |
| **Chest x-ray** | 26.36 | -949 (N = 36) |
| **Pneumostat Device** | 28 | -588 (N = 21) |
| **Overall savings** | | +14,063 (£703/patient) |

## REFERENCES


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## P178 AMBULATORY CARE OF PRIMARY SPONTANEOUS PNEUMOTHORAX WITH A PNEUMOSTAT DEVICE – COST EFFECTIVE AND SAFE


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**Introduction and objectives** A Heimlich Valve attached to an intercostal drain facilitates the ambulatory management of primary spontaneous pneumothorax (PSP) and in selected individuals permits outpatient care. We have 3 years of experience in doing this with Atrium's *Pneumostat* device. We ascertained the safety and cost effectiveness of this ambulatory pathway.

**Methods** We conducted a retrospective evaluation of all patients presenting with a PSP from March 2013 to December 2014. Data was collected on management, length of stay (LOS) and complications. Outpatients with a *Pneumostat* are advised to attend the chest clinic 24 h after bubbling stops for review for drain removal, or earlier if any concerns. Medical bed days saved was calculated as time at home with the device *in situ*, as standard BTS care would require an inpatient stay with a drainage bottle.

**Results** 73 patients presented with a PSP. 34 patients required chest tube drainage, 24 of which were managed as an outpatient with a *Pneumostat*. The median LOS in the outpatient group was 1.0 day (IQR 0.0–2.0 days) vs 3.5 days (IQR 1.3–7.0 days) in the inpatient group. A total of 98 bed days were saved using the device. Based on a cost of £25.70 per *Pneumostat* and £312 per bed day, the overall saving was £29,959.20. Patients who required thoracic surgery were kept on the "inpatient waiting list" and could be admitted directly from home.

In the outpatient group, there was 1 drain site infection, 1 drain displacement and 1 patient failed to attend follow-up but returned a week later with a resolved pneumothorax.

**Conclusion** *Pneumostat* devices have recently been withdrawn from use in the United States by FDA decree. Although legal in the UK and supported by the MHRA, a Certificate of Medical Necessity is required to purchase the devices and there is no alternative "all-in-one" solution that attaches to a standard chest drain. Our data shows that this device is safe in uncomplicated PSP and confers significant financial savings. These benefits should not be overlooked and a consensus statement is required to ensure their continued use in the UK.

## P179 THE EFFECTIVENESS OF CHEMICAL PLEURODESIS AGENTS IN SPONTANEOUS PNEUMOTHORAX: A SYSTEMATIC REVIEW


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**Introduction and objectives** Spontaneous Pneumothorax (SP) is a common pathology. Recurrence rates (RR) for Primary SP (PSP) are often quoted as approximately 30% (individual studies reporting anywhere between 17 and 49%), with less data available on Secondary SP (SSP) recurrence rates. Recurrence prevention at first episode remains controversial. International guidelines suggest pleurodesis for non-resolving air leak or recurrence prevention at second episode. There are numerous candidate agents for chemical pleurodesis.

This study aimed to comprehensively review the existing literature regarding chemical pleurodesis as a treatment modality.

**Methods** The systematic review methodology was based on the PRISMA approach and principles. Literature searches of multiple databases (PubMed, Embase, Medline, Web of Science, Cochrane Library) used combinations of terms including "spontaneous", "pneumothor*", "chemical", "talc", "tetracycline", "minocycline", "iodopovidine", and "blood". Abstracts were reviewed for relevance by two authors, who subsequently assessed and extracted data from the full articles.

**Results** Of 522 abstracts reviewed; 427 were excluded (e.g. case reports, letters, reviews, animal models or basic science articles); an additional 4 papers included via back-referencing. 99 full text papers were reviewed; 58 were excluded for the following

**Abstract P179 Table 1** Detail of 8 randomised trials assessing efficacy of chemical pleurodesis

| Study | Medical/Surgical | Intervention agent (# cases) | Control (# cases) | PSP/SSP (# cases) | Co-Intervention | Recurrence rate (agent/control) |
|---|---|---|---|---|---|---|
| **Light (1990)** | M | Tetracycline (113) | Drainage only (116) | 46/183 | Nil | 25%/41% |
| **Almind* (1989)** | M | Talc (29) vs tetracycline (33) | Drainage only (34) | 71/25 | Thoracoscopy (no intervention) | 8%/13%/36% |
| **Tschopp (2002)** | M | Talc (61) | Drainage only (47) | 108/0 | Thoracoscopy (no intervention) | 5%/34% |
| **Chen (2006)** | S | Minocycline (103) | Saline (99) | 202/0 | VATS - bullectomy | 2%/8% |
| **Chung* (2007)** | S | Talc and Dextrose (42) vs Dextrose alone (49) | Drainage only (50) | 141/0 | Thoraco-scopic bleb resection/cautery | 2%/2%/6% |
| **Agarwal (2011)** | M | Iodopovidone (20) | Talc (15) | 10/25 | Nil | 0%/0% |
| **Alayouty (2011)** | S | Minocycline (42) | Abrasion (40) | 82/0 | VATS -bullectomy | 0%/5% |
| **Chen (2013)** | M | Minocycline (106) | Drainage only (108) | 214/0 | Nil | 29%/49% |

*Three arms of trial.