Conclusion Our survey highlights that whilst most responders would manage a symptomatic patient with a large SSP with a chest drain, over a third would choose a less invasive approach. Current guidelines appear to be the leading justification. There is current equipoise in the management of SSP.

REFERENCES

- MacDuff A, Arnold A. Management of spontaneous pneumothorax: BTS Pleural Disease Guideline 2010. *Thorax*. 2010;**65**(Suppl 2):ii18–31.
- Thelle A, Gjerdevik M. Randomised comparison of needle aspiration and chest tube drainage in spontaneous pneumothorax. *ERJ*. 2017;**49**(4):1601296.

P198

OUTCOMES OF AUTOLOGOUS BLOOD PLEURODESIS IN PERSISTENT AIR LEAK: AN EIGHT-YEAR RETROSPECTIVE STUDY

K Ur Rehman, L Okiror, P Sivakumar. *Guys and St Thomas NHS Foundation Trust, London, UK*

10.1136/thorax-2021-BTSabstracts.307

Abstract P198 Table 1 Results

Variable	Number
Number of attempts at ABP, median (range) n=68	1 (1–3)
Indications for ABP (%)	
Post thoracic surgery	48/68 (70.6)
Secondary pneumothorax	14/68 (20.6)
Empyema with bronchopleural fistula	4/68 (5.9)
Other	2/68 (2.9)
Volume of blood used for ABP, mean (SD), ml n=56	55.3 (16.8)
Time to cessation of PAL, median (range), days n=47	3 (1–7)
Size of chest tube (%)	
≥20 F	52/68 (76.5)
≥12 - <20 F	13/68 (19.1)
<12	3/68 (4.4)
Inpatient ABP outcome (%) n=66	
Secondary pneumothorax	
Cessation of PAL	11/14 (78.6)
Persistence of PAL	2/14 (14.3)
Reduction in PAL	1/14 (7.1)
Post thoracic surgery	
Cessation of PAL	32/48 (66.7)
Persistence of PAL	12/48 (25)
Reduction in PAL	4/48 (8.3)
Empyema with bronchopleural fistula	
Cessation of PAL	4/4 (100)
Success rate of ABP as a second line therapy (%) n=23	
Post talc pleurodesis	8/10 (80)
Post endobronchial valve	6/8 (75)
Post thoracic surgery	1/5 (20)
Treatment following failure of ABP (%)	8/68 (11.8)
Thoracic surgery	3
Endobronchial valve	2
Talc pleurodesis	2
Complications (%)	
Pleural infection	8/68 (11.8)
Tube blockage	1/68 (1.5)
Severe chest pain	1/68 (1.5)
Desaturation	1/68 (1.5)
Recurrence of PAL within one year (%)	1/19 (5.2)

Introduction and Objectives Autologous blood pleurodesis (ABP) is one of the treatment options for recurrent pneumothorax and postoperative persistent air leak (PAL) following lobectomy.

We aimed to assess the effectiveness of ABP in PAL.

Methods Patients who underwent ABP from January 2013 to June 2021 were identified retrospectively through the procedure coding database and review of the pleural booking diary. Data was collected on demographics and treatment outcomes. Success was defined as cessation of PAL permitting drain removal within seven days of ABP.

Results 68 patients underwent ABP averaging 8.5 patients per year. Mean age was 63 (SD 17.23). 18/68 (26.5%) patients were females.

Results are summarised in table 1.

Conclusion In this selected population, ABP is effective in the management of both surgical and medical PAL. Our data suggests high success rate not only as a first line therapy for PAL but also in cases where talc pleurodesis or endobronchial valve placement has failed.

P199

THE ROLE OF MULTI-LEVEL INTERCOSTAL NERVE BLOCK IN LOCAL ANAESTHETIC THORACOSCOPY (LAT)

¹S Ajmal, ²D Walker, ¹S Johnstone, ³E Caruana, ¹M Tufail, ¹RK Panchal. ¹Institute for Lung Health, Glenfield Hospital, University Hospitals of Leicester NHS Trust, Leicester, UK; ²Department of Anaesthetics, Glenfield Hospital, University Hospitals of Leicester NHS Trust, Leicester, UK; ³Department of Thoracic Surgery, Glenfield Hospital, University Hospitals of Leicester NHS Trust, Leicester, UK

10.1136/thorax-2021-BTSabstracts.308

Introduction Intercostal nerve block (ICNB) has long been used as an adjunct to analgesia in thoracic surgery. It provides effective pain relief and a reduction in morphine requirement.¹ Local anaesthetic thoracoscopy (LAT) is performed by respiratory physicians usually under conscious sedation with local anaesthesia at the port insertion site. This however does not sufficiently anaesthetise the parietal pleura and patients can experience pain during biopsies.

Objectives To compare LAT with multi-level ICNB versus standard care to determine if it reduces pain, length of stay (LOS) and analgesia use.

Methods Prospective analysis of patients undergoing LAT between January and June 2021. In the ICNB group, Levobupivacaine 0.5% 10ml was mixed with Xylocaine 1% (lidocaine with adrenaline 1:200,000) 10ml and administered as 4ml per rib space (up to 5 rib spaces) at the angle of the rib immediately before LAT. Standard care received a maximum of 20ml Xylocaine 1% at the LAT port site only. Visual Analogue Score (VAS) for pain (0–100mm) was measured at 1 and 2 hours post LAT and daily including a record of total analgesia used.

Results 20 patients [10 ICNB vs 10 standard care group]. Mean age 68 years with 70% males. The most common diagnosis was mesothelioma (35%) and fibrinous pleuritis (35%). There were no complications associated with ICNB.

Conclusions Patient reported VAS for pain in the ICNB group was reduced by 41mm at 1 and 2 hours post LAT and 38mm at day 1 (p<0.05) compared to standard practice. [Minimal Clinically Important Difference >16mm].² Mean LOS was reduced by 58% in the ICNB group (p<0.05). Oral morphine and paracetamol use reduced by 40% and 56%, respectively.

Abstract P199 Table 1

Mean VAS(0 to 100mm)	Standard group (n=10)	ICNB group (n=10)	P value
1 hour post LAT	64	23	0.002
2 hour post LAT	64	23	0.002
Day 1	55	17	0.001
Day 2	34	NA	NA
Length of stay (Mean/Median, days)	2.4/2	1/1	0.009
Total analgesia use (mean)			
Oral morphine,mg	38.5	23	0.347
Codeine,mg	34.4	38.6	0.912
Paracetamol,g	3.4	1.5	0.006

In this small cohort, ICNB potentially has a role in reducing pain, LOS and analgesia use and allows LAT to be more tolerable, and may widen the scope of procedures possible during LAT.

REFERENCES

1. Taylor R, et al. Postoperative analgesia in video-assisted thoracoscopy: the role of intercostal blockade. *J Cardiothorac Vasc Anesth*. 2004 Jun;18(3):317-21.
2. Dahlberg GJ, et al. Minimal clinically important difference for chest discomfort in patients undergoing pleural interventions. *BMJ Open Respir Res*. 2020 Dec;7(1):e000667.

Asthma: phenotyping and the response to biologics

P200

URINARY LEUKOTRIENE E4 AS A BIOMARKER IN NSAID EXACERBATED RESPIRATORY DISEASE (N-ERD): A SYSTEMATIC REVIEW AND META-ANALYSIS

¹B Tailor, ²M Marquette, ³PC Calder, ²PJ Curtis, ²AM Wilson. ¹Norfolk and Norwich University Hospital NHS Foundation Trust, Norwich, UK; ²University of East Anglia, Norwich, UK; ³University of Southampton, Southampton, UK

10.1136/thorax-2021-BTSAbstracts.309

Introduction NSAID exacerbated respiratory disease (N-ERD) - formerly aspirin-induced asthma (AIA), is an asthma phenotype characterised by increased leukotriene production. Urinary Leukotriene E4 (uLTE₄) indicates cysteinyl leukotriene production and activity.

Objectives To evaluate whether baseline uLTE₄ in N-ERD are different from post-aspirin challenge uLTE₄ in N-ERD and whether baseline uLTE₄ in N-ERD are different from aspirin-tolerant asthma (ATA) patients and healthy controls (HC).

Methods A systematic literature search (Medline, EMBASE, EMCARE, CINAHL, PsychINFO) was performed from database inception to January 2021, to identify 1) studies reporting baseline uLTE₄ in both AIA/N-ERD and ATA asthmatics, and 2) uLTE₄ pre- and post-aspirin challenge tests. Meta-analysis was performed (i.e. pooled standardised mean difference (SMD) with 95% confidence intervals (95% CI)) and risk of bias assessed (implementing Cochrane Handbook for Systematic Reviews of Diagnostic Test Accuracy).

Results Of 522 study records reviewed, qualitative synthesis and meta-analysis were performed on $n=36$ and $n=33$ studies respectively (Meta-analysis; $n=1273$ AIA, 1305 ATA, and

582 HV across 8 countries). Criteria for aspirin intolerance were (i) positive aspirin challenge alone ($n=26$), (ii) convincing clinical history ($n=2$), and (iii) either challenge or history ($n=8$). Methodologies used for uLTE₄ analysis were (i) Amer-sham-enzyme immunoassay (A-EIA) ($n=8$), (ii) Cayman-enzyme immunoassay (C-EIA) ($n=18$), (iii) mass spectrometry (MS) ($n=5$), and (iv) radioimmunoassay (RIA) ($n=6$). uLTE₄ was higher in AIA vs ATA (SMD: 0.80; 95% CI: 0.71–0.89) and distinguished ATA from HC (SMD: 0.52; 95% CI: 0.23–0.81). For studies reporting uLTE₄ at baseline and post-challenge, uLTE₄ increased following aspirin challenge in AIA ($n=12$, SMD: 0.56; 95% CI: 0.26–0.85) but not ATA ($n=8$, SMD: 0.12; CI: -0.08–0.33). Risk of bias was acceptable across all studies, however 30.6% of quality assessment items were unfulfilled.

Conclusions This comprehensive systematic review and meta-analysis showed that uLTE₄ is significantly higher in N-ERD than ATA or HC. Likewise, people with N-ERD have greater increases in uLTE₄ following aspirin challenge. Because of heterogeneity, and lack of original data point reporting, diagnostic accuracy evaluation for uLTE₄ was not possible. In patients not fit to undergo confirmatory challenge tests for N-ERD, uLTE₄ can serve as a useful adjunct to diagnostic process.

Please refer to page A193 for declarations of interest related to this abstract.

P201

TO WHAT EXTENT DOES THE PROTOTYPE ORACLE SCALE PREDICT TREATMENT BENEFITS? PREDICTED VERSUS OBSERVED IMPACT OF ANTI-INFLAMMATORY TREATMENTS

¹S Couillard, ¹WH Do, ²R Beasley, ³A Laugerud, ¹M Jabeen, ¹S Ramakrishnan, ¹J Melhorn, ¹TSC Hinks, ¹ID Pavord. ¹University of Oxford, Oxford, UK; ²Medical Research Institute of New Zealand, Wellington, New Zealand; ³Sanofi Norway, Oslo, Norway

10.1136/thorax-2021-BTSAbstracts.310

Background We have derived a prototype asthma attack risk scale (ORACLE)¹ centred on the peripheral blood eosinophil count and exhaled nitric oxide (FeNO). We speculate that the excess risk identified by raised biomarkers would be equivalent to the benefits of specific anti-inflammatory treatment.

Objective To assess whether the treatment effect conferred by raised blood eosinophils and FeNO is predicted by ORACLE.

Methods Observed biomarker-stratified annualised severe asthma attack rates of patients randomised to control and anti-inflammatory treatment arms were extracted from the Novel START (as needed salbutamol vs low dose regular or as needed ICS), CAPTAIN (fluticasone furoate (FF) 100 vs 200µg/d-containing arms), QUEST (placebo vs Dupilumab 200mg/2w), and DREAM (placebo vs any mepolizumab) studies. Observed rate ratios were calculated between control and active arm attack rates in patients with any raised type-2 biomarker at baseline (blood eosinophils $\geq 0.15 \times 10^9/L$ or FeNO ≥ 25 ppb) and those with none (blood eosinophils $< 0.15 \times 10^9/L$ and FeNO < 25 ppb). The predicted biomarker-stratified attack rates were calculated based on our hypothesis that type-2 high asthma has an anti-inflammatory treatment effect equal to moving from any biomarker high stratum's predicted risk to the biomarker low stratum's predicted risk.

Results The Table shows the observed vs ORACLE-predicted biomarker-stratified annual asthma attack rates and anti-