Abstract P177 Figure 1 Evolution of FEV₁ z-scores over 3 years in patients from Naples (A, n=15) and from London (B, n=50).

Improving the investigation of suspected respiratory disease

P178 THE EFFECT OF BAL INDUCED INFLAMMATION ON NASAL INNATE DEFENCE – REDUCTION IN EXPERIMENTAL HUMAN PNEUMOCOCCAL CARRIAGE

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Introduction and Objectives BAL causes pulmonary inflammation post procedure. It is not known if the inflammation affects the upper respiratory tract and nasal mucosa. We have developed an experimental human pneumococcal carriage (EHPC) platform. We wished to establish if prior bronchoscopy was associated with altered carriage rates in EHPC.

Methods Participants were screened for natural carriage of pneumococcus by nasal wash. **Group A** then proceeded to **inoculation** 7 days after initial screening whereas **Group B** underwent **bronchoscopy** with BAL prior to inoculation. Bronchoscopy with BAL was performed using fibre optic bronchoscope and instillation of 200 ml 0.9% saline in 50 ml aliquots followed by immediate manual aspiration via the working port of the bronchoscope. Participants were inoculated with 6B or 23F *S pneumoniae* (15 000–60 000 CFU/ml) within 14 days of bronchoscopy. Carriage was determined by the presence of pneumococci in nasal wash samples at 48 hr and/or 7 days post inoculation.

Results Thirty-seven participants were recruited, of which 19 proceeded to BAL prior to inoculation; 22 were inoculated with 6B and 15 with 23F. Baseline characteristics were not significantly different between Group A and B. Neither group had any symptoms at the time of inoculation. Both Group A and B were subdivided into 23F or those that received 6B. The inoculum dose was not significantly different between the BAL groups for either 23F or 6B. The mean length of time between bronchoscopy and inoculation was 10 days (± 1). Carriage rates between Group A 6B and Group B 6B were significantly different ($p=0.008$); this difference was not seen between Group A 23F and Group B 23F. In adults challenged with SPN, carriage rates differ by type. In an experiment with high carriage rates, there was a significant decrease in carriage rates in subjects with preceding BAL.

Conclusions This study suggests that the inflammatory process caused by bronchoscopy with BAL, as highlighted in previous research, may influence innate mucosal defence. The inflammatory effect of bronchoscopy with BAL should be accounted for in future research allowing adequate time before performing interventions which may be affected.

P179 THE CHANGING NUMBERS AND INDICATIONS OF MEDIASTINOSCOPY PROCEDURES PERFORMED FOLLOWING THE INTRODUCTION OF ENDOBRONCHIAL ULTRASOUND AT A UK TERTIARY CENTRE

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Introduction Endobronchial Ultrasound (EBUS) is a minimally invasive procedure that is being increasingly utilised in the diagnosis and management of mediastinal pathologies as an alternative to surgical mediastinoscopy. This study aimed to determine the extent to which EBUS is changing the numbers of and indications for surgical mediastinoscopy at Guy's & St Thomas' NHS Foundation Trust, a tertiary centre for EBUS and surgical mediastinoscopy.

Methods Patient records were retrospectively reviewed for two twelve-month periods, the first immediately preceding the introduction of EBUS (Phase 1), and the second commencing after a period of 15 months had elapsed (Phase 2). The numbers and indications of invasive mediastinal sampling procedures performed during each phase were determined and compared, as was the frequency of lymph node stations sampled.

Results 596 patients were included; the number of patients undergoing mediastinoscopy fell from 158 in Phase 1 to 106 in Phase 2; 332 patients underwent EBUS in Phase 2. There was significant reduction in mediastinoscopies performed to stage lung cancer (64% reduction; $p<0.001$), confirm suspected lung cancer (40% reduction; $p<0.001$); and diagnose granulomatous disease (60% reduction; $p<0.001$); however, there was a 47% increase ($p<0.001$) in mediastinoscopies performed to diagnose mediastinal lymphadenopathy unrelated to lung cancer. In Phase 2, EBUS accounted for 81% of lung cancer staging procedures, 85% of procedures confirming suspected lung cancer, and 84% confirming granulomatous disease. Nodal stations 4R/L and 7 were most frequently sampled by both procedures, while access to stations 10R/L and 11R/L by EBUS accounted for 20% of all stations sampled in Phase 2.

Conclusion The introduction of EBUS has reduced the use of surgical mediastinoscopy, but also increased the total number of mediastinal sampling procedures performed. Mediastinoscopy use has significantly fallen for all indications that are amenable to EBUS-directed sampling.

P180 ELECTROMAGNETIC NAVIGATION BRONCHOSCOPY AS A DIAGNOSTIC METHOD IN RESPIRATORY MEDICINE: EARLY CLINICAL EXPERIENCES

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Introduction and Objectives Electromagnetic navigation bronchoscopy (ENB) is approved for use as an adjunct to conventional bronchoscopy, aiding the diagnosis of peripheral lung lesions. It is a modern technique which improves bronchoscopic yield, thereby potentially preventing unnecessary operations or high-risk procedures. Our objective was to assess the use of this technique in regular clinical practice, and to identify factors which may influence its success.

Methods A retrospective data analysis of all ENB procedures carried out in a 120-bed speciality respiratory hospital in Solingen, Germany, between 2007 and 2011 revealed a total of 43 procedures. In each case, size and anatomical location of the tumour based on CT findings were noted. A positive result was documented if as a result of the procedure a clinical diagnosis could be reached.

Results ENB reached a clinical diagnosis in 15 of 43 patients (34.9%); eight malignant tumours, seven benign lesions, 28 left unclear. Of these 28, further investigations revealed a malignant process in nine