

**Abstract P289 Table 1** Results of 135 patients undergoing EBUS-TBNA as a first line investigation for mediastinal and/or hilar lymphadenopathy

Group	Patients (n)	Patients with diagnostic test	Nodes sampled	Number of total passes	Inadequate samples (n)	Diagnostic samples (n)	Diagnosis of samples
<b>1: IMHL-</b>	<b>35</b>	<b>34 (97%)</b>	<b>66</b>	<b>151</b>	<b>5 (8%)</b>	<b>61 (92%)</b>	<b>Reactive: 45 (74%)</b> <b>Malignant: 4 (6%)</b> <b>Non-caseating granulomas: 12 (20%)</b>
1a: IMHL with no radiological suggested diagnosis	13	13 (100%)	24	44	1 (4%)	23 (96%)	Reactive: 17 Malignant: 2 Non-caseating granulomas: 4
1b: IMHL with radiologically suggested diagnosis	22	21 (95%)	42	107	4 (10%)	38 (90%)	Reactive: 28 Malignant: 2 Non-caseating granulomas: 8
<b>2: radiologically diagnosed likely lung cancer with mediastinal lymphadenopathy</b>	<b>90</b>	<b>86 (96%)</b>	<b>145</b>	<b>279</b>	<b>8 (6%)</b>	<b>137 (94%)</b>	<b>Reactive: 60</b> <b>Malignant: 76</b> <b>Non-caseating granulomas: 1</b>
<b>3: other e.g. known/suspected malignancy (excluding lung), previous cancer diagnosis, post cancer treatment</b>	<b>10</b>	<b>10 (100%)</b>	<b>19</b>	<b>40</b>	<b>0</b>	<b>19 (100%)</b>	<b>Reactive: 13</b> <b>Malignant: 4</b> <b>Non-caseating granulomas: 2</b>

**P290 DO LUNG FUNCTION INDICES CORRELATE WITH RISK OF PNEUMOTHORAX FOLLOWING CT-GUIDED BIOPSY?**

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**Introduction** CT-guided lung biopsy is a widely used and established technique for the diagnosis of lung lesions, and several risks are well described. The most common complication is pneumothorax, occurring in approximately 20% of cases. We aimed to characterise the risk of post-procedure pneumothorax in our patient population, and determine whether lung function indices correlate with the incidence of pneumothorax.

**Methods** Patients undergoing CT-guided biopsy of intraparenchymal lesions from January 2014–2015 were retrospectively identified. Patients were stratified in to those with and without post-procedure pneumothorax. Spirometry and transfer factor for carbon monoxide (TLCO) were reviewed and compared using an unpaired *t* test.

**Results** 111 procedures were performed in 111 patients (53 men 58 women; mean age 70.4 years; range 40 to 88), all done for suspected malignancy. Pneumothorax was identified in 25 patients post biopsy (21%; age range 61 to 87; mean  $\pm$  SD age, 73.4  $\pm$  6.7), 12 female (48%) and 9 patients (36%) had emphysema.

Of the 25 patients with pneumothorax, FEV<sub>1</sub> ranged from 32 to 115% predicted (80.5%  $\pm$  23.57%) and FVC ranged from 54 to 125% (91.9%  $\pm$  19.1%). TLCO was available for 14 patients, range 34 to 99% predicted (71.5%  $\pm$  19.2%). Of the 86 patients with no pneumothorax, FEV<sub>1</sub> ranged from 27 to 126% predicted (73.9%  $\pm$  29.9%) and FVC ranged from 38 to 139% predicted (85%  $\pm$  21.9%). TLCO was available for 50 patients (58%), range 31 to 108% predicted (63.2%  $\pm$  18.9%).

There was no significant difference in FEV<sub>1</sub> (*p* = 0.199), FVC (*p* = 0.109), FEV<sub>1</sub>/FVC ratio (0.99) or TLCO (0.176) between the two groups.

In patients developing pneumothorax, those requiring a chest drain (6/25, 24%) showed no significant difference in FEV<sub>1</sub> or FVC (*p* = 0.76 and *p* = 0.41 respectively) to those managed conservatively. TLCO however was significantly lower in patients requiring chest drain insertion (79%  $\pm$  16.1% vs. 52.8%  $\pm$  12.8%, *p* = 0.002).

**Conclusion** From our patient group, spirometry data and TLCO showed no correlation with the frequency of pneumothorax. In those patients developing pneumothorax, a low TLCO may predict the need for invasive management.

**P291 RELATIONSHIP OF *IN VITRO* PARTICLE SIZE TO *IN VIVO* LUNG DEPOSITION AND EXHALED FRACTION**

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**Introduction and objectives** *The particle size distribution and the median mass aerodynamic diameter (MMAD) of an inhaled product are important characteristics which may influence the deposition of the drug in the lung and as a consequence may also affect its therapeutic index. We evaluated the relationship between *in vitro* MMAD and *in vivo* lung deposition (LD, expressed as fraction of the delivered dose) and the exhaled fraction (EF), using relevant literature from scintigraphic studies conducted in healthy volunteers and asthmatic patients. Moreover the relationship between the ratio of EF to LD and MMAD has been further assessed.*

**Methods** Data from 21 studies in healthy volunteers (15 with pressurised metered dose inhalers (pMDI) and 6 with dry powder inhalers (DPI)) and 11 studies in asthmatic patients (8 pMDI and 3 DPI) have been evaluated. Asthmatic patients had a FEV<sub>1</sub> >70% predicted, supporting pooling of the data with that of healthy volunteers.