tarnished by a high complication rate and is not suitable in patients with significant co-morbidity. Therefore, VBN and R-EBUS are particularly useful where TTNB carries a high risk.

REFERENCES

1 Kikuchi E, Yamazaki K, Sukoh N, *et al*. Endobronchial ultrasonography with guide-sheath for peripheral pulmonary lesions. *Eur Respir J* 2004;**24**:533–7
2 Ishida T, Asano F, Yamazaki K, *et al*. Virtual bronchoscopic navigation combined with endobronchial ultrasound to diagnose small peripheral pulmonary lesions: a randomised trial. *Thorax* 2011;**66**:1072–7

S33 PERFORMANCE OF EBUS-TBNA IN THE PATHOLOGICAL SUBTYPING AND MOLECULAR TESTING OF NON-SMALL CELL LUNG CANCER (NSCLC) IN A UK THORACIC ONCOLOGY CENTRE

H Al-Najjar, M Evison, J Martin, P Barber, P Crosbie, R Booton. *University Hospital of South Manchester, Manchester, UK*

10.1136/thoraxjnl-2015-207770.39

Introduction The categorisation of NSCLC into squamous and non-squamous subtypes is an important requirement for the optimisation of patient care as this may modify chemotherapy regimens and direct molecular testing. The lung cancer national audit highlights the need to minimise the rate of NSCLC not otherwise specified (NSCLC-NOS).[1] The aim of our study was to determine whether samples obtained by endobronchial ultrasound guided-transbronchial needle aspiration (EBUS-TBNA) could be used to pathologically subtype NSCLC and provide sufficient material for molecular testing.
Methods A prospectively maintained database of consecutive patients with suspected lung cancer referred to our unit, a UK regional thoracic oncology centre, was analysed. All patients diagnosed with NSCLC by EBUS-TBNA cytology at our centre between Sept 2013 and Sept 2014 were included in the study.
Results A total of 89 patients were diagnosed with NSCLC using EBUS-TBNA. The pathological subtypes were: n = 46 (51.7%) squamous cell carcinoma, n = 41 (46%) adenocarcinoma and n = 2 (2.2%) NSCLC-NOS. All samples with a new diagnosis of non-squamous subtype were sent for EGFR mutation analysis, with sufficient material in 97% (n = 35/36) and one activating mutation was identified. ALK analysis was successfully performed in all 5 samples in which this was requested. Additional molecular testing was requested in 9 samples with sufficient material in 89% (n = 8/9).
Conclusions EBUS-TBNA cytology can be used to successfully subtype NSCLC and provide adequate material for molecular testing in the majority of cases. The rate of NSCLC-NOS in our study (2.2%) compares favourably with local cancer network (13.5%) and national (12.9%) figures.

REFERENCE

1 National lung cancer audit report 2014 doi http://www.hscic.gov.uk/catalogue/PUB16019/clin-audi-supp-prog-lung-nlca-2014-rep.pdf

S34 DO BRONCHIAL WASHINGS IMPROVE THE DIAGNOSTIC SENSITIVITY FOR LUNG CANCER WHEN ENDOBRONCHIAL TUMOUR IS SEEN?

A Dewar, S Bartlett, R Breen. *Guy's and St Thomas NHS Foundation Trust, London, UK*

10.1136/thoraxjnl-2015-207770.40

Background/introduction Current BTS guidelines suggest that when endobronchial tumour is seen optimal diagnostic sensitivity is achieved when at least five mucosal biopsies are supplemented with bronchial washings and brushings.

We review our bronchoscopy practice annually in line with current guidance, and strive to make continuous improvements. We have previously noted that bronchial brushings improve the diagnostic sensitivity for lung cancer when an endobronchial tumour is seen, but bronchial washing samples do not.
Aims To confirm that bronchial washings do not increase diagnostic sensitivity for lung cancer where endobronchial tumour is seen at flexible bronchoscopy.
Method We reviewed all flexible bronchoscopy procedures performed at our hospital during a two-year period (n = 365). We reviewed the Electronic Patient records for histology and cytology results in all cases where endobronchial tumour was visualised.
Results Mucosal biopsies and either bronchial brushings or bronchial washings or brushings and washings were performed in all cases where an endobronchial lesion was seen (n = 65). Washings were performed in addition to mucosal biopsies in 95% of cases, bronchial brushings however were sent in 78% of cases.

The diagnostic sensitivity for mucosal biopsies alone was 80% (n = 65), bronchial brushings in addition to mucosal biopsies improved diagnostic sensitivity to 86%. In the small number of cases (n = 4) mucosal biopsies were negative for malignancy but a malignant diagnosis made on bronchial brushings and washings, bronchial brushings were positive in all cases and whereas bronchial washings were positive in only 50%.
Conclusion Bronchial washings did not add any additional value to the diagnosis of lung cancer when endobronchial tumour was seen. We suggest that mucosal biopsies and brushings combined provide optimal diagnostic sensitivity in these cases. Omitting bronchial washing would produce both cost saving (in our Trust processing bronchial washings costs £76.50 per sample), and time efficiencies; bronchoscopists could then focus on obtaining multiple good quality mucosal biopsies, which are of paramount importance in molecular subtyping of lung cancers.

S35 METHYLENE BLUE STAINING DIFFERENTIATES NON-SMALL CELL LUNG CANCER TISSUE

[1]P Riddell, [2]EL Molloy, [2]S Finnegan, [1]EP Judge, [1]KC Redmond, [1]N Mulligan, [2]M Maguire, [2]S O'Dea, [1]JJ Egan. [1]*Mater Misericordiae University Hospital, Dublin, Ireland*; [2]*Maynooth University, Maynooth, Ireland*

10.1136/thoraxjnl-2015-207770.41

Introduction The early detection of lung cancer during bronchoscopy remains a diagnostic challenge. Chromobronchoscopy, using vital dyes, has the potential to aid diagnosis by highlighting areas of dysplastic or malignant change. There are limited numbers of studies in this field but results to date are conflicting. Using a novel electrospray system, we delivered targeted methylene blue (MB) to *ex vivo* human lung cancer tissue. The aim of this study was to identify whether MB provided a differential stain for lung cancer.
Methods Patients undergoing surgical resection were consented to the study. Following lobectomy, fresh sections of cancerous and non-cancerous tissue were obtained. A range of concentrations of MB were applied topically to tissue sections by electrospray atomisation. Following delivery of MB, the tissue was washed with 0.9% saline and images captured. Results were classified in terms of intensity of dye uptake as well as differential staining between normal and cancerous tissue.