radical treatment between August 2011 and August 2012. Electronic records were reviewed and baseline parameters, including blood results were recorded. mGPS (based on CRP and Albumin), NLR and PLR were calculated. All cases were subject to multidisciplinary assessment, detailed staging and 2-year follow-up. Kaplan-Meier plots were generated for mGPS, NLR, PLR and compared using log-rank for trend and log rank. Differences in mortality were quantified using Hazard Ratios (HR). Differences in stage proportion were compared using the Chi-Square z test.

Results 97 patients were identified. 44/97 (45%) were male, mean age 70 (± 8) years. 54/97 (56%) underwent surgery, 43/97 (44%) underwent radical RT. NLR and PLR provided no useful prognostic information. In surgical patients only, increasing mGPS was associated with decreasing 2-year survival (see Figure 1(a)), with curve separation occurring 1 year post-resection. Pre-operative mGPS 1 and 2 were associated with HR for death of 3.9 (95% CI 0.8–39.5, p = 0.095) and 5.8 (95% CI 1.38–106, p = 0.02) relative to mGPS 0. There were less Stage I and more Stage II patients in the mGPS 1 group (see Figure 1(b)), mGPS 0 and 2 appeared well matched for stage.

Conclusion These data suggest that pre-operative mGPS may be useful in risk-stratifying patients with early stage NSCLC. The late survival curve separation observed suggests recurrent malignancy rather than post-operative complications are likely to explain this. If confirmed prospectively, integration of mGPS into staging algorithms might allow more effective targeting of adjuvant therapies.

P76 WHEN IS IT SAFE TO DISCHARGE RESECTED STAGE 1A/1B NSCLC FROM THE CLINIC?

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10.1136/thoraxjnl-2014-206260.217

Introduction We have previously shown that the majority of recurrent disease occurs within the 2 years of lung cancer resection.[1] Follow-up protocols vary between centres but often involve serial CXR examinations. At Salford we also perform a CT scan at one year after surgery. Given that the prognosis for early stage lung cancer is good, the question arises as to when it's safe to discharge such patients from follow-up? Traditionally this has been set at 5 years.

The Salford Lung Cancer d-base provides comprehensive data on all patients in Salford undergoing surgical resection including outcomes during follow-up. To date, 255 patients have undergone resection of non-small cell lung cancer and the rate of resection is increasing year on year.[2] This audit sets out to review the data following introduction of routine PET scans to our service in 2005 with a view to providing guidance as to when it might be safe to discontinue regular follow-up of early stage disease.

Abstract P76 Table 1 Patterns of survival for patients with 1A or 1B disease

Stage	0yr	1 yr	2 yr	3 yr	4y
1A	23	23	22	22	22 (96%)
1B	20	18	17	17	17 (85%)
1A + 1B	43	41	39	39	39 (91%)

Methods All patients undergoing surgical resection were first identified from March 2006 to July 2010. Those with a post-operative stage 1A or 1B disease were then extracted; allowing a 4 year follow up for each patient. Those patients dying within 4 years of surgery from non-cancer and non-lung cancer causes were excluded to produce a selected cohort of patients. 1, 2, 3 and 4 years survival figures were then produced for each category of disease (1A, 1B and 1A+1B) to observe for any serial changes.

Results A total of 89 patients underwent surgical resection during the study period of which 55 (62%) were 1A or 1B disease. After exclusions, 43 patients (23 × 1A and 20 × 1B) were available for analysis. As expected, relapse rates were low and occurred in the first 2 years. Survival rates were high but remained stable after 2 years of follow up (see Table). The use of 1 year CT scans detected just 2 relapses.

Conclusions Allowing for the small numbers, the above audit supports a move away from traditional follow-up protocols to discharge alive and well patients with resected early stage disease from the clinic at 2 years. The role of imaging surveillance during the first 2 years requires further exploration.

REFERENCES

1 Tunney R *et al*. P195 Temporal Trends and Distribution of Recurrent Disease Following Lung Cancer Surgery and Relationship to Pre-Operative PET-CT. Thorax 2010;65:A159–A160
2 Gornasa M *et al*. P7 Radical Treatments for Lung Cancer: Impact of Recent Service Improvements. Thorax 2013;68:A77–78

P77 CARCINOMA IN-SITU AT THE BRONCHIAL RESECTION MARGIN – A CASE FOR ROUTINE SURVEILLANCE WITH AUTOFLUORESCENCE BRONCHOSCOPY

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10.1136/thoraxjnl-2014-206260.218

Introduction Lung cancer is the leading cause of cancer mortality worldwide, with squamous cell carcinomas commonly arising in the central airways and accounting for nearly 30% of cases. Progression from normal bronchial epithelium to carcinoma in-situ (CIS) has been well described, and is found at the resection margin after lobectomy in up to 2.5% of cases; however, its fate has not been defined.

Method Cases referred to the autofluoresence bronchoscopy (AFB) surveillance programme at this institution were analysed retrospectively from 1999–2012, for all those shown to have CIS at the resection margin following surgery for TxN0M0 squamous cell carcinoma. Patients underwent longitudinal assessment of the tracheobronchial tree to (a) confirm CIS at the resection margin and track its fate over time (b) characterise development of other preinvasive lesions.

Results Twenty-two cases were identified with a median interval of 6 months (range 3–9) from surgical resection to first AFB. Thirteen patients (59%) were confirmed to have CIS on biopsy at the bronchial resection margin during the first AFB. Eleven (85%) of these progressed to invasion over a median interval of 37 months (range 4–85). A subgroup of these (5 patients) developed 8 invasive cancers at sites distant to the anastomotic site and 9 patients had >1 CIS lesion at a distant site. Two patients (9%) found to have CIS after initial post-resection AFB, persisted after follow-up of 36–45months. Although no progression

has been seen, both have developed CIS at distant sites to the resection margin. Nine patients (41%) were found to have no evidence of CIS at the resection margin and during a median surveillance period of 37 months (range 19–126), all were found to have normal bronchial epithelium. One patient in this group developed a second primary lung cancer that was surgically resected.

Conclusion CIS at the bronchial resection margin is a strong indicator of its fate to progression to invasive carcinoma. Its persistence sets precedent for the development of multiple, consecutive CIS lesions and invasive squamous cell carcinomas, and highlights the importance of routine AFB surveillance following surgery in these cases.

P78 CAN PET STANDARD UPTAKE VARIABLE (SUV) PREDICT DISEASE PROGRESSION IN EARLY-STAGE NON-SMALL CELL LUNG CANCER (NSCLC)?

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10.1136/thoraxjnl-2014-206260.219

Introduction The correlation between SUV on PET-CT and prognosis in NSCLC has been the subject of much debate. We were interested in whether SUV_{max} values could be used to determine which cases of early stage (1–2) NSCLC were likely to progress.

Methods We reviewed all 93 histologically proven early stage NSCLCs seen at our tertiary centre over a one year period. We defined those with SUV_{max} in the upper quartile as the high SUV group and compared these with the remainder. Historical data were considered to allow subsequent outcomes to be established.

Results Median follow up was 772 days during which time there was a 17% mortality rate [all-cause median time to death 338 days]. The median SUV_{max} for the cohort was 10.1, and those in the upper quartile all had results over 15.0.

The high SUV_{max} group (n = 27) and low SUV_{max} group (n = 68) had similar baseline characteristics, received similar treatment regimens and there were no significant differences in tumour size between the groups. Disease progression and mortality were both significantly higher in those with SUV_{max} in the upper quartile, despite this group tending to have earlier disease (see Table 1).

Retrospective analysis using Youdin's index suggested that the optimal threshold for predicting disease progression was not significantly different when cases with nodal involvement were excluded [SUV_{max} 15.0 vs 15.5]

Conclusions Our results suggest that SUV_{max} may indeed help identify those patients with early stage NSCLC at higher risk of progression. In our large cohort those with an SUV_{max} of >15 were over 3 times more likely to develop progressive disease than those with lower results and this was independent of tumour size or nodal involvement. Whether individuals in the higher-risk group would benefit from increased surveillance or adjuvant therapy remains to be established.

Clinical management of pulmonary infection

P79 BRONCHIECTASIS SEVERITY IN PRIMARY IMMUNODEFICIENCY - A TWO CENTRE STUDY

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10.1136/thoraxjnl-2014-206260.220

Introduction Up to 70% of patients with Primary Immunodeficiency syndromes such as Common Variable Immunodeficiency (CVID) have bronchiectasis. Within this population it is a major driver of morbidity.[1]

The Bronchiectasis Severity Index (BSI) is capable of accurately categorising non-cystic fibrosis bronchiectasis patients into three severity groups that predict risk of hospitalisation and mortality at one and four years.[2] It consists of nine clinical parameters, and was derived and validated in a diverse international bronchiectasis population. Mild disease is defined as a BSI score of <4, moderate 5–8 and severe >9.

This study aims to assess the relative severity of bronchiectasis associated with primary immunodeficiency.

Methods 24 Patients from the Royal Free Hospital, London and 22 patients from the Freeman Hospital Newcastle were recruited. Age, body mass index,% predicted FEV1, number of hospitalisations in the last 2 years, number of exacerbations in the last year, medical research council dyspnoea (MRCD) score, Pseudomonas and other pathogen colonisation status and number or lobes involved on CT chest were obtained to calculate the BSI. Statistical analysis was carried out using SPSS V11.

Results The 46 patients were 67.4% female with a mean age of 55.9. There were no significant differences in age, gender or disease severity between the two centres. The median BSI was 4 (i.e. mild disease).

56% of patients had mild disease, 21.7% were moderate and 21.7% severe bronchiectasis. These patients had markedly less severe disease than the mixed aetiology population of 603 patients used to derive the scoring tool.

Conclusion Patients with primary Immunodeficiency associated bronchiectasis were younger with less severe disease compared to the BSI cohort population previously reported. This suggests good multidisciplinary care in Primary Immunodeficiency with earlier referral to respiratory specialists. It also correlates with our prior longitudinal data that FEV1 decline in immunodeficiency-related bronchiectasis is less rapid than other aetiologies.[1]

Abstract P78 Table 1 Early stage NSCLC

	Age	% female	Predicted FEV1%	Median PS	%treated with curative intent	Median Stage	Disease Progression*	All cause Mortality*
High SUV† (n = 27)	70.5	50%	80.8%	1	89.5%	1b	40.7%	30.8%
Low SUV† (n = 68)	70.8	53%	77.6%	1	92.3%	2a	13.2%	11.9%

†Cut off SUV_{max} =15; *Denotes significant statistical difference $p < 0.05$.