prognostic value of 18F-FDG uptake at dysplasia sites was also assessed with surveillance. Can 18F-FDG uptake predict progression of pre-invasive lesions or cancer elsewhere?

Methods 39 patients with pre-invasive endobronchial lesions underwent 18F-FDG PET/CT examination prior to autofluorescence bronchoscopy. Pre-invasive lesions were classified as either high-grade (carcinoma in situ or severe dysplasia) or low grade (mild to moderate dysplasia). The degree of uptake of 18F-FDG was analysed without knowledge of the bronchoscopic or other clinical findings.

Results 8/39 patients (all with high grade dysplasia) had increased 18F-FDG uptake at known dysplasia sites. Of these 8 patients 1 had surgical resection of invasive carcinoma and two patients were diagnosed and treated as invasive cancer based on imaging and follow-up. Eight patients had 18F-FDG uptake at sites remote from known dysplasia; 2/8 patients had synchronous invasive lung carcinoma (pT1N0M0), 2/8 recurrent cancer in hilar and mediastinal nodes, and 4/8 patients had inflammatory uptake in lung, mediastinal or hilar nodes. During surveillance of up to 3 years, 3/5 patients with positive 18F-FDG uptake developed biopsy proven invasive cancer at site of dysplasia. 3/31 patients with negative 18F-FDG uptake developed invasive cancer at high grade dysplasia sites during surveillance. No low grade lesion showed 18F-FDG uptake or progressed to invasive cancer during surveillance.

Conclusions PET/CT was able to detect early synchronous cancers in patients with pre-invasive endobronchial lesions. PET/CT was also able to detect 18F-FDG uptake in a proportion of patients at known dysplasia sites suggesting adjacent or underlying occult invasive carcinoma.

P162 COMPARISON OF CLINICAL CHARACTERISTICS AND OUTCOMES OF PATIENTS WITH PET POSITIVE VS PET NEGATIVE SOLITARY PULMONARY NODULES MANAGED BY A LUNG MDT

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Background PET-CT is an important test in the management of patients with solitary pulmonary nodules (SPNs). There is a paucity of data on clinical characteristics, follow-up and outcomes of patients with PET negative nodules as compared to PET positive ones.

Objective To compare the clinical characteristics and outcomes of patients with PET positive vs PET negative SPNs managed by the Lung MDT at a large teaching hospital in North England.

Methods 144 patients (age range 32–92 years, 76 females) with SPNs measuring 8–29 mm discussed at the Lung MDT who had PET-CT scans over a 3 year period between 1st January 2007 and 31st December 2009 were identified retrospectively through the Lung Cancer database. Demographic data, nodule characteristics, MDT decisions, median time to diagnosis, and outcomes were evaluated. We tested for differences in characteristics between patients with PET positive and negative nodules using t test and Mann–Whitney U test for continuous variables, and χ^2 tests or Fisher exact tests as indicated for categorical variables.

Results In comparison to PET positive nodules, PET negative ones were smaller, less likely to be spiculated, more often associated with an MDT decision to follow-up with serial CT scans, less likely to undergo surgical resection or have radical radiotherapy, had a longer median time to diagnosis, and were less likely to be malignant. The overall prevalence of malignancy in patients with PET negative nodules, however (15/41 [36.6%]) was higher than that reported in previous studies. This may be due to the higher prevalence of adenocarcinoma in our series.

Conclusions Significant differences in clinical characteristics and outcomes have been demonstrated between patients with PET positive and PET negative solitary pulmonary nodules. The overall prevalence of malignancy in patients with PET negative nodules (15/41 [36.6%]) was higher than that reported in previous studies.

Abstract P162 Table 1 Comparison of clinical characteristics and outcomes of patients with PET positive and PET negative solitary pulmonary nodules

	PET positive (n=103)	PET negative (n=41)	p Value
Clinical and radiologic			
Age	70.4 (9.2)	69.2 (10.0)	0.506
Male gender	47 (45.6%)	21 (51.2%)	0.367
Smoking history (Current or former)	81 (78.6%)	29 (70.7%)	0.368
Diabetes	7 (6.8%)	4 (9.8%)	0.546
Outline of nodule			0.008
Spiculated	65 (63.1%)	17 (41.5%)	
Lobulated	28 (27.2%)	13 (31.7%)	
Smooth	6 (5.8%)	10 (24.4%)	
Other	4 (3.9%)	1 (2.4%)	
Morphology of nodule			0.794
Solid	89 (86.4%)	33 (80.5%)	
Subsolid	14 (13.6%)	8 (19.5%)	
Pure ground glass	–	–	
Median (range) nodule size (mm)	17.0 (9–28)	13.0 (8–23)	<0.001
Growth on serial CTs/CT and PET			<0.001
Yes	27 (26.2%)	12 (29.3%)	
No	19 (18.4%)	24 (58.5%)	
Data not available	57 (55.3%)	5 (12.2%)	
Outcomes			
MDT decision			<0.001
Histology	81 (78.6%)	8 (19.5%)	
CT follow-up	4 (3.9%)	29 (70.7%)	
Other	18 (17.5%)	4 (9.8%)	
Treatment			<0.001
Surgical resection	58 (56.3%)	12 (29.3%)	
Radical RT	23 (22.3%)	3 (7.3%)	
Other	22 (21.4%)	26 (63.4%)	
Median (range) time to diagnosis (days)	45 (15–721)	145 (6–801)	<0.001
2 year mortality	22 (21.4)	6 (14.6)	0.357
Final diagnosis			<0.001
Lung cancer	82 (79.6%)	11 (26.8%)	
Adenocarcinoma	61	12	
Non-adenocarcinoma	21	1	
Other cancer	9 (8.7%)	4 (9.8%)	
Benign	10 (9.7%)	22 (53.7%)	
Indeterminate	2 (1.9%)	4 (9.8%)	

P163 FACTORS INFLUENCING HISTOLOGICAL CONFIRMATION OF DIAGNOSIS IN LUNG CANCER PATIENTS

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Background The National Lung Cancer Audit routinely reports to each unit the percentage of their patients who have received histological confirmation of a diagnosis of lung cancer. This could therefore be interpreted as a key performance indicator for a cancer unit. We studied the factors that influenced the rate of histological confirmation of diagnosis in our population.

Methods Data were extracted from our existing lung cancer database from January 2009 to May 2011. Demographics and clinical data were analysed to assess the factors that led to failure of confirmation of histological diagnosis.