P81 NON-MALIGNANT RESECTIONS FOR SUSPECTED MALIGNANCY: DO THEY REALLY REPRESENT BENIGN DISEASE?

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Introduction To optimise the definitive management of early-stage lung cancer, indeterminate pulmonary nodules are often resected without a prior tissue diagnosis and a proportion of resections will therefore yield benign pathology. We investigated the rates and outcomes of non-malignant resections at our centre in the last decade.

Method We reviewed all 1328 resections for suspected primary lung malignancy where there was no pre-operative tissue diagnosis carried out at our centre between 2007 and 2017, looking at any differences in clinical characteristics between those patients who had benign and malignant lesions as well as the post-operative outcome.

Results Histopathology demonstrated benign nodules in 126/1328 (9.5%): this cohort was younger (64.5±9.6 years vs 68.8±9.6 years, p<0.001) and had less obstructed spirometry, but similar smoking status and dyspnoea scores as those with malignancy (table 1). Most common benign diagnoses were organising pneumonia (24, 19.0%), non-specific granulomatous inflammation (18, 14.3%) and tuberculosis (13, 10.3%). There was no difference in perioperative mortality (1.6% vs 2.1%, p=0.97 for benign and malignant groups respectively). As expected, 5 year mortality was high in the malignant group (49.3%), but although significantly less (p<0.001), 20.4% of the benign cohort had still deceased in this period.

Conclusions This is one of the largest series looking at resection of indeterminate pulmonary nodules. Although resection of benign nodules may be considered unhelpful, the fact that one fifth of patients had deceased at 5 years suggest that they represented active non-malignant disease rather than incidental findings.

Abstract P81 Table 1

	Benign	Malignant	p
n	126	1202	
Male	62 (49.2)	603 (50.2)	0.911
FVC, litres	3.30 (1.07)	3.02 (0.90)	0.002
ppFVC (mean (sd))	104.44 (21.75)	99.73 (19.43)	0.013
FEV1, litres	2.22 (0.81)	2.01 (0.69)	0.003
ppFEV	86.89 (25.58)	82.99 (21.99)	0.071
FEV1/FVC ratio	0.72 (0.37)	0.67 (0.15)	0.009
NYHA Dyspnoea score			0.875
0	40 (32.3)	333 (28.0)	
1	48 (38.7)	482 (40.5)	
2	31 (25.0)	323 (27.1)	
3	5 (4.0)	50 (4.2)	
4	0 (0.0)	2 (0.2)	
COPD	40 (31.7)	330 (27.5)	0.359
Smoking (%)			0.121
Never	13 (10.4)	95 (8.0)	
Current	47 (37.6)	361 (30.5)	
Ex-smoker	65 (52.0)	726 (61.4)	
Pack years	29.30 (27.08)	32.92 (27.56)	0.16
Prev. radiotherapy	6 (4.8)	100 (8.3)	0.219
Prev. thoracic surgery	4 (3.2)	50 (4.2)	0.768

P82 TREATMENT PATTERNS IN PATIENTS WITH STAGE IIIB-IV NSCLC IN CLINICAL PRACTICE: RETROSPECTIVE ANALYSIS OF A UK TRUST DATABASE

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Background I-O Optimise is a new multinational data platform developed to enable real-world insights into the management of thoracic malignancies. As part of this initiative, the current analysis reports the characteristics and treatment patterns for adult patients diagnosed with stage IIIB or IV NSCLC at one of the largest integrated cancer centres in the UK.

Methods Retrospective cohort study using longitudinal data already collected from electronic medical records, including all

Abstract P82 Table 1

	Stage IIIB-IV NSCLC at diagnosis									
	All		NSQ		SQ		NSCLC NOS		NSCLC w/o pathological confirmation	
	N	%	N	%	N	%	N	%	N	%
Total Number of Patients	**2119**	**100.0**	**666**	**31.4**	**396**	**18.7**	**315**	**14.9**	**693**	**32.7**
Treatment with Systemic Anti-Cancer Therapy (SACT)										
No SACT	1471	69.4	366	55.0	216	54.5	201	63.8	668	96.4
At least one line of therapy	648	30.6	300	45.0	180	45.5	114	36.2	25	3.6
PATIENT CHARACTERISTICS (at NSCLC diagnosis) OF TREATED POPULATIONS										
Age category (years)										
18-44	25	3.9	15	5.0	<5	–	6	5.3	<5	–
45-64	267	41.2	122	40.7	81	45.0	50	43.9	5	20.0
65-79	310	47.8	141	47.0	85	47.2	52	45.6	16	64.0
80+	46	7.1	22	7.3	>10	–	6	5.3	<5	–
WHO Performance Score										
0-1	387	59.7	185	61.7	113	62.8	63	55.3	9	36.0
2	158	24.4	73	24.3	46	25.6	22	19.3	8	32.0
3-4	52	8.0	26	8.7	9	5.0	11	9.6	<5	–
Missing/Unknown	51	7.9	16	5.3	12	6.7	18	15.8	<5	–
Year of diagnosis										
2007-2011	263	40.6	103	34.3	78	43.3	62	54.4	10	40.0
2012-2017*	385	59.4	197	65.7	102	56.7	52	45.6	15	60.0
SACT REGIMENS ADMINISTERED**										
1st Line of therapy	**648**	**30.6**	**300**	**45.0**	**180**	**45.5**	**114**	**36.2**	**25**	**3.6**
Platinum agent CT	***549***	***84.7***	***228***	***76***	***170***	***94.4***	***105***	***92.1***	***21***	***84.0***
Carboplatin-based	457	70.5	172	57.3	157	87.2	86	75.4	>15	–
Cisplatin-based***	92	14.2	56	18.7	13	7.2	19	16.7	<5	–
Pemetrexed-containing tx	*225*	*34.7*	*175*	*58.3*	<5	–	*40*	*35.1*	<5	–
Non-platinum (single) agent CT	***7***	***1.1***	***<5***	***–***	***<5***	***–***	***0***	***0.0***	***0***	***0.0***
TKI	***63***	***9.7***	***51***	***17.0***	***<5***	***–***	***6***	***5.3***	***<5***	***–***
TKI alone	59	9.1	49	16.3	<5	–	5	4.4	<5	–
Gefitinib	29	4.5	25	8.3	0	0.0	<5	–	<5	–
Erlotinib	15	2.3	11	3.7	<5	–	<5	–	<5	–
Afatinib	13	2.0	11	3.7	0	0.0	<5	–	<5	–
Check-point inhibitor anti-PD-L1	***7***	***1.1***	***<5***	***–***	***<5***	***–***	***0***	***0.0***	***0***	***0.0***
Pembrolizumab	7	1.1	<5	–	<5	–	0	0.0	0	0.0
Clinical trial with unknown tx	***22***	***3.4***	***11***	***3.7***	***5***	***2.8***	***<5***	***–***	***0***	***0.0***
2nd Line of therapy	**223**	**10.5**	**119**	**17.9**	**54**	**13.6**	**38**	**12.1**	**6**	**0.9**
Platinum agent CT	***34***	***15.2***	***15***	***12.6***	***13***	***24.1***	***<5***	***–***	***<5***	***–***
Non-platinum (single) agent CT	***21***	***9.4***	***10***	***8.4***	***7***	***13.0***	***<5***	***–***	***<5***	***–***
Docetaxel	16	7.2	8	6.7	<10	–	0	0.0	0	0.0
Pemetrexed	5	2.2	<5	–	0	0.0	<5	–	<5	–
TKI	***141***	***63.2***	***78***	***65.6***	***29***	***53.7***	***28***	***73.7***	***<5***	***–***
TKI alone	128	57.4	69	58.0	28	51.9	25	65.8	<5	–
Erlotinib	113	50.7	55	46.2	27	50.0	25	65.8	<5	–
Crizotinib	7	3.1	<10	–	<5	–	0	0.0	0	0.0
TKI + other agent(s)	13	5.8	9	7.6	<5	–	<5	–	0	0.0
Nintedanib + docetaxel	10	4.5	<10	–	0	0.0	<5	–	0	0.0
Check-point inhibitor anti-PD-L1	***19***	***8.5***	***10***	***8.4***	***5***	***9.3***	***<5***	***–***	***0***	***0.0***
Pembrolizumab	10	4.5	7	5.9	<5	–	<5	–	0	0.0
Nivolumab	7	3.1	<5	–	<5	–	<5	–	0	0.0
Clinical trial with unknown tx	***6***	***2.7***	***<5***	***–***	***0***	***0.0***	***<5***	***–***	***0***	***0.0***

CT, chemotherapy; NSQ, non squamous-cell carcinoma; PD-L1, programmed death-ligand 1; SQ, squamous-cell carcinoma; NOS, not otherwise specified; TKI, tyrosine kinase inhibitor; tx, treatment; w/o, without. *Patients with a diagnosis up to August 2017 were included, with 6 months follow-up. **Selected regimens of SACT are presented where numbers allow. ***Cisplatin-based includes patients who were commenced on cisplatin but switched to carboplatin because of toxicity.

adult patients diagnosed with stage IIIB-IV NSCLC between January 2007 and August 2017. Minimum follow-up was 6 months. Distinct lines of therapy (LoT) were identified using a clinically-verified algorithm based on the name and date of systemic anti-cancer therapy (SACT) administered and the gap between two treatments.

Results Overall, 2119 patients were included. Mean age at diagnosis was 71.4±11.2 years. Nearly one-third (32.7%) were clinically diagnosed without pathological confirmation (table 1) and very few of these patients have SACT administration recorded. Following diagnosis, 648 patients (30.6%) received ≥1 LoT, 223 (10.5%)≥2 LoT and 60 (2.8%)≥3 LoT. Proportions of patients treated decreased with age (73.5% [25/34] aged 18–44 years; 52.7% [267/507] aged 45–64 years; 29.8% [310/1040] aged 65–79 years; 8.6% [46/538] aged 80 +years) and performance score (58.5% [387/662] PS0–1; 38.2% [158/414] PS2; 6.1% [52/848] PS3–4). Between the periods 2007–2011 and 2012–2017, increased proportions were treated (28.2% [263/933] and 32.5% [385/1186] respectively). Patient characteristics of the treated cohort and regimens administered for 1st and 2nd LoT are shown (table 1).

Conclusions Around 70% of this real-world cohort did not receive any SACT, and the administration of treatment was strongly associated with age and performance status. The changing availability of treatment options over time (including the emergence of immunotherapy) and survival outcomes by LoT will be presented in more detail for the cohort described.

P83 ROUTINE PREOPERATIVE BRAIN CT IN RESECTABLE NON-SMALL CELL LUNG CANCER – TEN YEARS EXPERIENCE FROM A TERTIARY UK THORACIC CENTRE

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Objectives Although detection of brain metastasis can change treatment intent in non-small cell lung carcinoma (NSCLC), head imaging is not routinely performed during initial staging. In our previous study, 4.8% of patients considered for surgical treatment had asymptomatic synchronous brain metastases, encouraging us to include contrast-enhanced head CT (CE-CT) in our routine staging protocol. We present results from a large cohort of potentially resectable NSCLC patients imaged irrespective of the presence of neurological symptoms.

Materials and methods Patients with newly diagnosed NSCLC were identified from Royal Papworth Hospital registries. Data regarding the clinical stage (7th edition TNM), neurological symptoms and imaging findings were retrieved from clinical records.

Results 1074 NSCLC patients considered potentially resectable based on the initial staging CT of the chest and abdomen (stage IA-IIIB) were included. Synchronous brain metastases were detected by CE-CT in 23 patients (2.1%); the rate of positive findings increased with stage, ranging from 0.7% (IA) to 2.6% (IIIA) (p=0.023). The majority of metastases were asymptomatic (19 of 23, 82.6%). Asymptomatic brain lesions were smaller than symptomatic (13.3±4.8 vs 24.8±8.2 mm; p<0.01); in both groups, the most frequent location was frontal lobe.

Conclusion Routine CE-CT detected synchronous brain metastases in approximately 2% of NSCLC patients eligible for radical surgical treatment. The majority of the metastatic lesions were asymptomatic. With the exception of stage IA in which the detection rate is very low, CE-CT could therefore be useful in routine NSCLC staging.

P84 ADVANCED STAGE AND AGGRESSIVE CANCERS FORM A CONSIDERABLE PROPORTION OF LUNG MALIGNANCIES IN IDIOPATHIC PULMONARY FIBROSIS AND SCLERODERMA-ASSOCIATED ILD

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Background Studies using public health records have reported an increased risk of developing lung cancer in patients with interstitial lung disease (ILD). However little information exists on the frequency of lung cancer in UK ILD practice.

Method All cases discussed in the Royal Brompton Hospital Lung Cancer MDT meetings between May 2015 and April 2018 were interrogated for referring indication, patient attributes, staging and cancer confirmation.

Results 74 ILD patients (45 male) and 223 COPD patients (132 male) were identified; median age at cancer diagnosis (70) was similar in both groups. 'Ever' smokers formed three-quarters (55/74) of the ILD group. 1 in 4 ILD patients had IPF. Cancer was pathologically proven in 25/74 (33.8%) of ILD patients, against 56/223 (25.1%) of those with COPD. Cancer that was suspected due to CT morphology or progression but were not amenable to sampling because of poor fitness, inaccessibility or metastatic disease occurred in 15/74 (20.3%) and 22/223 (9.9%) of ILD and COPD patients respectively (p<0.01). As a category, [proven+suspected] cancers were more common in ILD (p<0.002). The proportion of stage IV non-small cell lung cancer (NSCLC) was also higher in ILD (8/18, 44.4%) than in COPD (10/45, 22.2%) (p=0.04). Small cell lung cancer (SCLC) was proven in 16% (4/25) and 7.1% (4/56) of ILD and COPD patients respectively. The four cases of SCLC in the ILD group occurred in patients with radiologic evidence of UIP (3 cases of IPF and one case of combined emphysema and UIP-pattern fibrosis). Within the IPF subgroup, 4 also developed stage IV NSCLC. Scleroderma with ILD was the commonest connective tissue disease (5/7) in this analysis, with two patients having stage IV and one stage IIIB NSCLC.

Conclusion The risk of developing lung cancer is high amongst those with ILD especially in IPF and when there is evidence of suspicious 'interval CT' change. Stage IV NSCLC

Abstract P84 Table 1

	Non-small cell lung cancer (NSCLC)							Small cell lung cancer (SCLC)	Other cancer types	Insuff. data
	IA	IB	IIA	IIB	IIIA	IIIB	IV			
ILD (n=74, cancers=25)	5	2	0	1	1	1	8	4	2	1
COPD (n=223, cancers=56)	11	9	1	5	9	0	10	4	5	2