

Respiratory Disease in Older People

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Important topics to cover

- Lung Cancer
- COPD
- NIV
- IPF
- Palliative care

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Lung Cancer ?should I get a CT

- ?should I get a CT scan
- 1 in 7 new cases of cancer in UK are lung (only 2nd to breast)
- Annual incidence 39 000 in UK
- Risk factors age and smoking
- Annual deaths 33 500 in UK
- Survival 37 % at 1 year and 7% at 5 years

Lung cancer-staging

TNM 8th - Primary tumor characteristics

T_x	Tumor in sputum/bronchial washings but not be assessed in imaging or bronchoscopy
T₀	No evidence of tumor
T_{is}	Carcinoma in situ
T₁	≤ 3 cm surrounded by lung/visceral pleura, not involving main bronchus
T_{1a(mi)}	Minimally invasive carcinoma
T_{1a}	≤ 1 cm
T_{1b}	> 1 to ≤ 2 cm
T_{1c}	> 2 to ≤ 3 cm
T₂	> 3 to ≤ 5 cm or involvement of main bronchus without carina, regardless of distance from carina or invasion visceral pleural or atelectasis or post obstructive pneumonitis extending to hilum
T_{2a}	>3 to ≤4cm
T_{2b}	>4 to ≤5cm
T₃	>5 to ≤7cm in greatest dimension or tumor of any size that involves chest wall, pericardium, phrenic nerve or satellite nodules in the same lobe
T₄	> 7cm in greatest dimension or any tumor with invasion of mediastinum, diaphragm, heart, great vessels, recurrent laryngeal nerve, carina, trachea, oesophagus, spine or separate tumor in different lobe of ipsilateral lung
N₁	Ipsilateral peribronchial and/or hilar nodes and intrapulmonary nodes
2	Ipsilateral mediastinal and/or subcarinal nodes
3	Contralateral mediastinal or hilar; ipsilateral/contralateral scalene/supraclavicular
M₁	Distant metastasis
M_{1a}	Tumor in contralateral lung or pleural/pericardial nodule/malignant effusion
M_{1b}	Single extrathoracic metastasis, including single non-regional lymphnode
M_{1c}	Multiple extrathoracic metastases in one or more organs

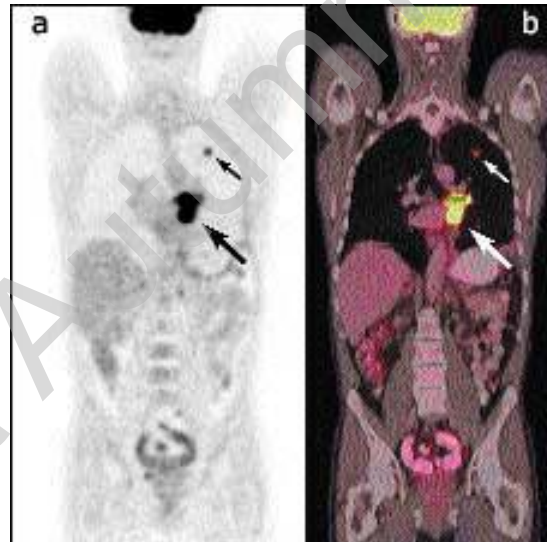
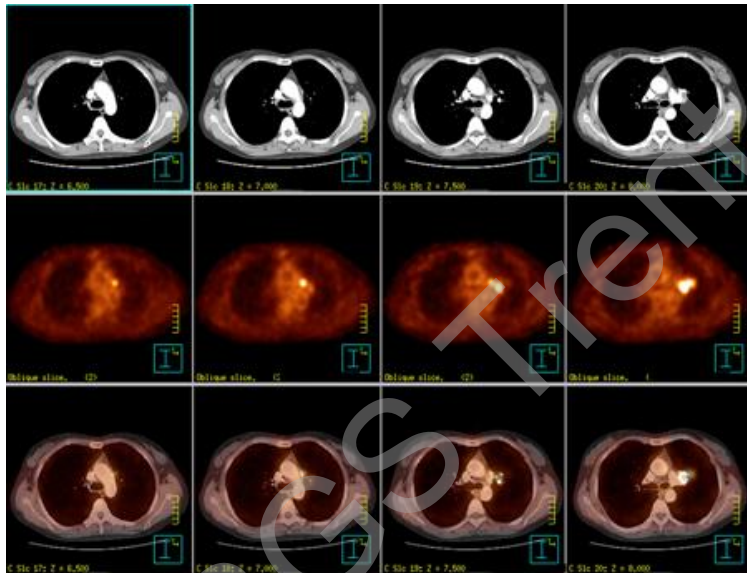
	N0	N1	N2	N3
T1	IA	IIB	IIIA	IIIB
T2a	IB	IIB	IIIA	IIIB
T2b	IIA	IIB	IIIA	IIIB
T3	IIB	IIIA	IIIB	IIIC
T4	IIIA	IIIA	IIIB	IIIC
M1a	IVA	IVA	IVA	IVA
M1b	IVA	IVA	IVA	IVA
M1c	IVB	IVB	IVB	IVB

Lung cancer treatment

- PS is the key. Need to have PS 0-1 for any treatment

Grade	Explanation of activity
0	Fully active, able to carry on all pre-disease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work
2	Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours
3	Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours
4	Completely disabled. Cannot carry on any selfcare. Totally confined to bed or chair
5	Dead

PET-CT Radical treatment



Treatment

- Options include:
 - Surgery (Stage I and Stage II)
 - Radical radiotherapy and chemotherapy (Stage III)
 - Stereotactic radiotherapy (Stage I and II)
 - Chemotherapy (Stage IV)
 - Immunotherapy if ALK/EGFR/PDL1 (Stage IV)

CT scan if

- Good PS
- Would like treatment
- Make a difference to the patient/carers/help at home (fast track if frail)
- Incidental finding of lung cancer and not for treatment we will record on MDT

COPD

'The diagnosis is suspected on the basis of symptoms & signs and supported by spirometry.'

- There is no single diagnostic test for COPD. Diagnosis relies on **history, physical examination** and confirmation of **airflow obstruction using spirometry**.
- A diagnosis of COPD should be considered in patients over the age of 35 who have a risk factor (generally smoking) and who present with exertional breathlessness, chronic cough, regular sputum production, frequent winter 'bronchitis' or wheeze
- The presence of airflow obstruction should be confirmed by performing post-bronchodilator spirometry

COPD Staging

Stage	Spirometric Findings
Mild	$FEV_1/FVC < .70$ $FEV_1 \geq 80\%$ predicted
Moderate	$FEV_1/FVC < .70$ FEV_1 between 50% and 80% predicted
Severe	$FEV_1/FVC < .70$ FEV_1 between 30% and 50% predicted
Very Severe	$FEV_1/FVC < .70$ $FEV_1 < 30\%$ predicted or $FEV_1 < 50\%$ predicted + chronic respiratory failure

Determining Disease Severity

- *No single measure can give an adequate assessment of true severity*
- **Multidimensional assessment** is therefore necessary in COPD
- *Severity assessment has implications for therapy and prognosis*
- *Disability in COPD is not always well reflected by the FEV₁*
- *Comprehensive assessment of severity includes the **degree of airflow obstruction, frequency of exacerbations & disability***

Plus:

- **BMI**
- **Health status**
- **Exercise capacity**
- **Breathlessness (MRC scale)**
- **Cor pulmonale**
- **T_LCO and PaO₂**

COPD Management

Patient with COPD

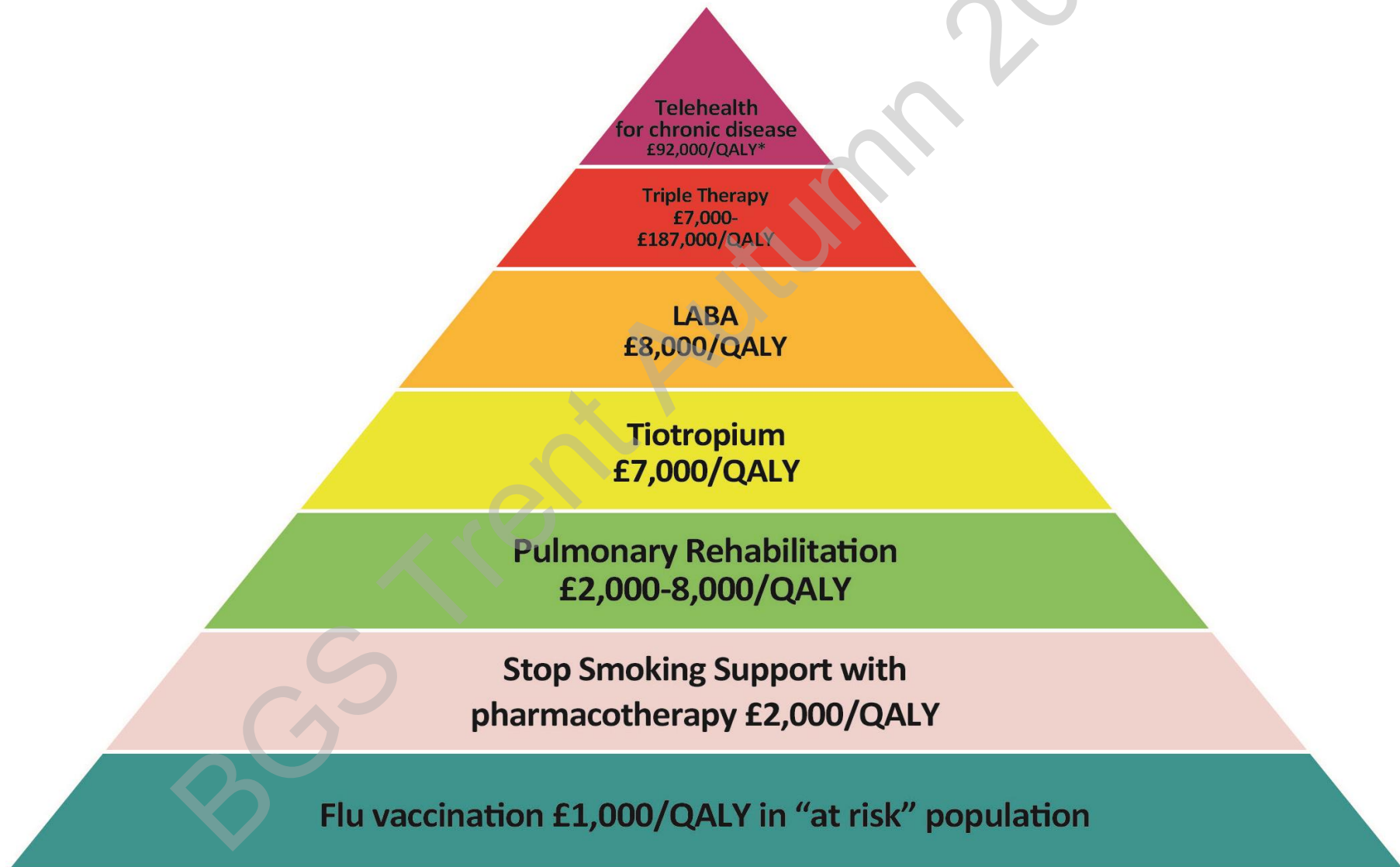
Assess symptoms/problems – Manage those that are present as below

Patients with COPD should have access to the wide range of skills available from a multidisciplinary team

Smoking	Breathlessness and exercise limitation	Frequent exacerbations	Respiratory failure	Cor pulmonale	Abnormal BMI	Chronic productive cough	Anxiety and depression
<ul style="list-style-type: none"> Offer help to stop smoking at every opportunity Combine pharmacotherapy with appropriate support as part of a programme 	<ul style="list-style-type: none"> Optimise inhaled therapy using the algorithm (2a) below If still symptomatic consider adding theophylline Offer pulmonary rehabilitation to all patients who consider themselves functionally disabled (usual MRC grade 3 and above) including those who have had a recent hospitalisation for an exacerbation Consider referral for surgery: bullectomy, LVRS, transplantation 	<ul style="list-style-type: none"> Offer annual influenza vaccination Offer pneumococcal vaccination Give self-management advice Optimise bronchodilator therapy using the algorithm (2a) below 	<ul style="list-style-type: none"> Assess for appropriate oxygen: <ul style="list-style-type: none"> - LTOT - ambulatory - short burst Consider referral for assessment for long-term domiciliary NIV 	<ul style="list-style-type: none"> Assess need for oxygen Use diuretics 	<ul style="list-style-type: none"> Refer for dietetic advice Refer to 'Nutrition support in adults' (NICE clinical guideline 32) Give nutritional supplements if the BMI is low 	<ul style="list-style-type: none"> Consider trial of mucolytic therapy Continue if symptomatic improvement 	<ul style="list-style-type: none"> Be aware of anxiety and depression and screen for them in those most physically disabled Refer to 'Depression in Adults with a Chronic Physical Health Problem' (NICE clinical guideline 91)

Palliative care
 Opiates should be used when appropriate for the palliation of breathlessness in patients with end-stage COPD unresponsive to other medical therapy
 Use benzodiazepines, tricyclic antidepressants, major tranquillisers and oxygen when appropriate
 Involve multidisciplinary palliative care teams

COPD QALY



COPD diagnosed with spirometric staging

Start with SABA or SAMA:

1. Salbutamol Easi-Breathe/Easyhaler
1. Salbutamol or ipratropium MDI (with or without spacer)
 - Bambuterol tablet (only for those who cannot use inhalers at all)

add

LABA

1. Formoterol Easyhaler or Atimos MDI (with or without spacer)
2. Salmeterol Accuhaler (MDI not licenced)

LAMA

or

1. Tiotropium (Spiriva) Handihaler or Respimat
1. Acclidinium (Eklira) Genuair
2. Glycopyrronium (Seebri) Breezhaler

FEV1 \leq 50% - Move to LABA and LAMA as above or

LABA/LAMA combination: Where possible stick to same device or LAMA

1. Tiotropium/oldacterol (Spiolto) Respimat
1. Acclidinium/formoterol (Duaklir) Genuair
2. Glycopyrronium/indacaterol (Ultibro) Breezhaler

**Continuing
breathlessness
without
exacerbations**

Frequent exacerbator - >2 per year (one exacerbation does not = frequent, especially at diagnosis)



ICS/LABA and LAMA — choose LAMA from above and add:

- Beclometasone/formoterol (Fostair) MDI (with or without spacer)
- Budesonide/formoterol (Symbicort Turbohaler / DuoResp Spiromax 400/12)
- Fluticasone/salmeterol (Seretide 500) Accuhaler

If patient continues to have uncontrolled breathlessness or exacerbations after trial of the above:

Check SpO₂, consider theophyllines, review diagnosis, consider referral to secondary care

DO NOT recommend nebulised therapy - refer for opinion

Frequent Exacerbators

- **Check for comorbidities e.g. Cardiac failure / IHD**
 - Use Beta Blockers in this case as they reduce death rates by 30% in COPD
- **Unusual organism**
 - Check for AFB, Pseudomonas
- **Wrong diagnosis?**
 - Bronchiectasis
 - Fibrosis
- **Adherence with therapy? DEVICE IS KING**
- **Disease progression?**
- **Trial of azithromycin/Roflumilast?**

COPD

- 2nd common cause of admission
- DECAF score

DECAF Score		Circle
D	eMRCD 5a (Too breathless to leave the house unassisted but independent in washing and/ or dressing)	1
	eMRCD 5b (Too breathless to leave the house unassisted and requires help with washing and dressing)	2
E	Eosinopenia (eosinophils < 0.05 x10 ⁹ /L)	1
C	Consolidation	1
A	Moderate or severe Acidaemia (pH < 7.3)	1
F	Atrial Fibrillation (including history of paroxysmal AF)	1
Total:		
In-hospital mortality: DECAF 0-1 (low risk) = 1 - 1.4%; DECAF 2 (intermediate risk) = 5.4 – 8.4%; DECAF 3+ (high risk) = 21.4 – 34.7%. Mortality remains low in DECAF 1 patients who score for pneumonia or acidaemia.		

Type 2 respiratory failure

- 20% of admission have type 2 respiratory failure
- 16% after treatment (20% improve)
- NIV showed to 40% reduction in death (NNT 8)
- Rising mortality from NIV in national audits
- 20% mortality with COPD
- 44% mortality with pneumonia
- 60% mortality with pulmonary oedema
- 34% did not receive treatment

NCEPOD NIV Results

Care of these patients was rated as **less than good** in **80% cases**.

MORTALITY

- Mortality rate was high - 34.5%
- Mortality varied with **diagnosis**:
 - COPD: 25%
 - Cardiogenic Pulm Oedema: 60%
- Mortality varied with **acidosis**:
 - pH 7.26-35: 26%
 - pH<7.26: 40%
- Mortality varied with **pneumonia**
 - With pneumonia: 44%
 - Without pneumonia: 25%

DELIVERY OF NIV

- NIV commenced by
 - Respiratory specialist: 26%
 - Non-Respiratory: 74%
- Treatment was delayed in 27%
- Median time 4.1 hours
- Too infrequent blood gases 32%
- Inappropriate ventilator management 35%
- Oxygen levels between 88-92% achieved in only 29% of patients

Who should I give NIV to?

- pH 7.26-7.35
- Respiratory diagnosis (COPD/Morbid obesity/kyphoscoliosis)
- Good PS
- Would never give
 - Asthma
 - Not type 2 respiratory failure
 - IPF
- Would be cautious
 - Pneumonia
 - CCF
 - Patient choice

Pulmonary Fibrosis

- Multiple causes
 - Connective Tissue Disease
 - UIP
 - NSIP
 - Sarcoidosis
 - Occupational i.e. asbestosis
 - Old TB

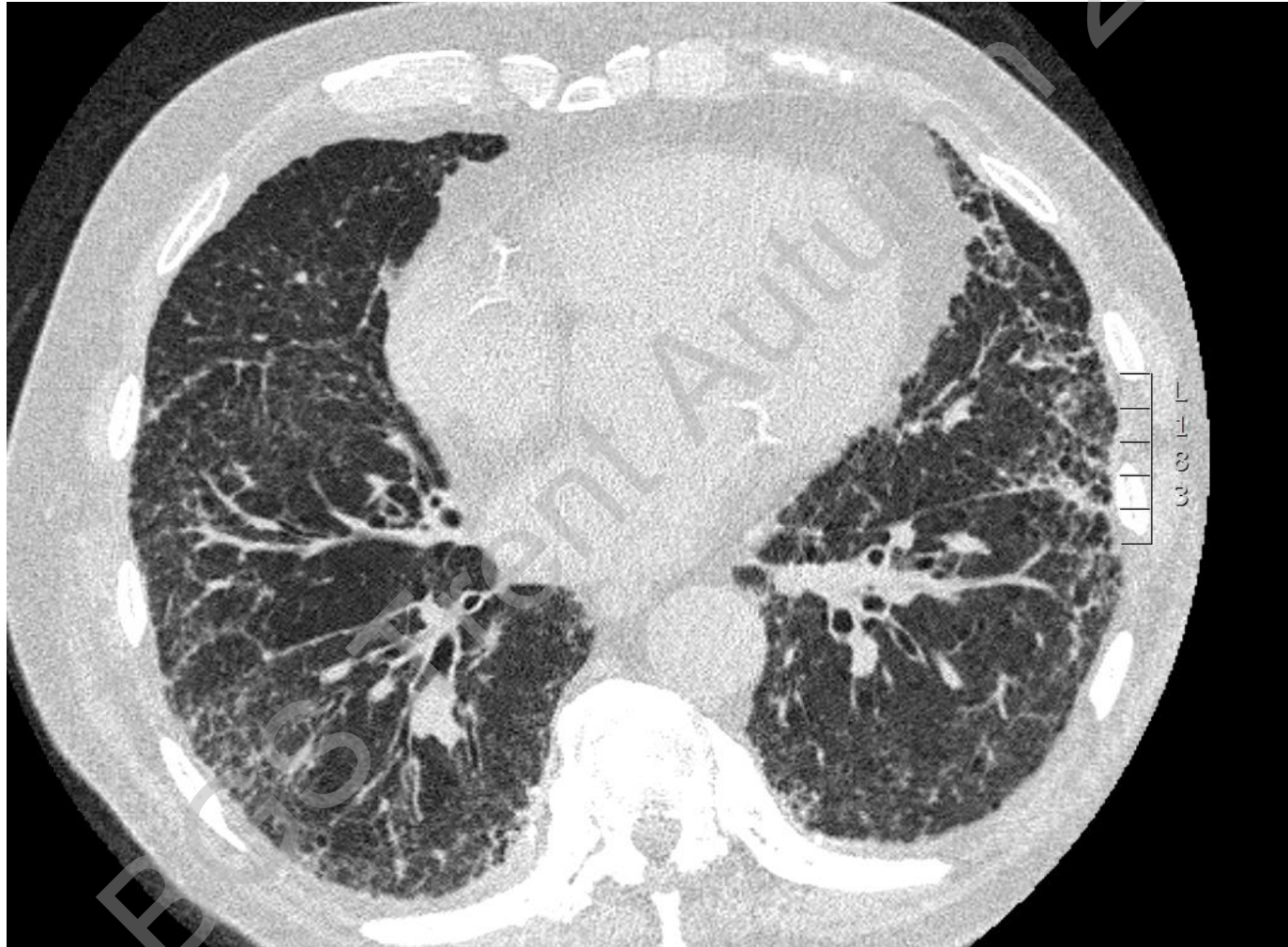
IPF

- Idiopathic pulmonary fibrosis
- Commonest fibrotic lung disease
- Presents with shortness of breath and clubbing
- Bilateral crepitation
- More common in men
- More common in smokers
- Different types: UIP/NSIP
- NSIP thought to be more steroids responsive

UIP



UIP



Treatments

- UIP
 - NICE says not to use steroids/azithioprine/NAC routinely
 - Pirferidone
 - Nintedanib
 - FVC 50-80%
 - Specialist centres only
-
- NSIP often steroids/MMF etc.

Palliative Care

- Morphine
- Fans
- Bendiazepine
- Physiotherapy for breathless management (Pulmonary rehabilitation)
- Steroids liver capsule pain/weight loss
- Oxygen if hypoxia
- Ambulatory oxygen if desaturation when exerting themselves.

Any questions

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