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Sheffield COPD Treatment Algorithm

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Diagnosis

Always ensure correct diagnosis – if diagnostic uncertainty consider referral if appropriate
See NG 115 Section 1.1

Non pharmacological management

Patient education/self-management plans, smoking cessation advice, anxiety management (community respiratory mental health team), diet and exercise advice. Influenza/ pneumococcal/Covid 19 vaccines

Pulmonary Rehabilitation if indicated – referral via SPA

Short acting β agonist PRN ***(Easyhaler Salbutamol 100mcg DPI or Salamol 100mcg pMDI plus spacer)***

Phenotype 1

COPD with predominant breathlessness
< 2 exacerbations per year
No Hx asthma

Prescribe LABA/LAMA

If persistent breathlessness that limits daily activities

Consider if now fits **Phenotype 2**
See referral to specialist service for further options

Phenotype 2

COPD with exacerbations
2 or more exacerbations per year
No Hx asthma

Prescribe LABA/LAMA

If continued exacerbations or breathlessness
1 severe or 2 moderate exacerbations within a year

Prescribe ICS/LABA/LAMA (as closed triple)

If continued exacerbations or breathlessness with eosinophils > 0.15 x10^9 /L*
(Eosinophils < 0.15 x10^9 /L* + continued exacerbations see referral to specialist service)

Phenotype 3

COPD with eosinophilia ≥ 0.3 x10^9 /L*
Or Hx of asthma

Prescribe ICS/LABA (2 month trial)

If continued exacerbations or breathlessness

Prescribe ICS/LABA/LAMA (as closed triple)

If continued exacerbations or breathlessness after short trial of ICS/LABA

*Blood eosinophils refers to the highest measured eosinophil count in the last 2 years (whilst stable and not taking oral steroids). If none available check at diagnosis or when treatment change considered. Further monitoring is not required.

Review medication and assess inhaler technique and adherence regularly for all inhaled therapies. Review non pharmacological treatment strategies regularly (see top)
Optimise co-morbidities. Consider one month trial of mucolytic (if productive) Use NACSYS
See referral to specialist services for further management options

Sheffield formulary choice inhalers for COPD

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LABA/LAMA (Long acting β agonist/long acting muscarinic antagonist)	ICS/LABA (Inhaled corticosteroid/ long-acting β agonist)	ICS/LABA/LAMA (Inhaled corticosteroid/ long-acting β agonist/ long-acting muscarinic antagonist)
Anoro 55/22 Ellipta ▼ (umeclidinium + vilanterol) *1 puff once daily DPI* 	**Relvar 92/22 Ellipta** (fluticasone + vilanterol) *1 puff once daily DPI* 	**Trelegy Ellipta 92/55/22**▼ (fluticasone + umeclidinium + vilanterol) *1 puff once daily DPI* 
Duaklir 340/12 Genuair ▼ (aclidinium + formoterol) *1 puff twice a day* 	**Fostair 100/6 NEXThaler** (beclometasone + formoterol) *2 puffs twice a day DPI* 	**Trimbow 87/5/9 NEXThaler** (beclometasone + formoterol + glycopyrronium) *2 puffs twice daily DPI* 
Ultibro 85/43 Breezhaler ▼ (indacaterol + glycopyrronium) *1 puff once daily capsule based DPI* 	**Fostair 100/6 pMDI** (beclometasone + formoterol) *2 puffs twice a day pMDI* 	**Trimbow 87/5/9 pMDI** (beclometasone + formoterol + glycopyrronium) *2 puffs twice daily pMDI* 
Bevespi 7.2/5 Aerosphere (glycopyrronium + formoterol) *2 puffs twice a day pMDI* 	**Symbicort 400/12 Turbohaler** (budesonide + formoterol) *1 puff twice a day DPI* 	**Trixeo Aerosphere 5/7.2/160** (formoterol + glycopyrronium + budesonide) *2 puffs twice daily pMDI* 

= Low carbon footprint

= High carbon footprint

= Once daily dose

= Twice daily dose

QD = Quick and deep breath

SS = Slow and steady breath

Use dry powder inhalers (DPI) first line where appropriate and agreed with the patient.

For each treatment group the formulary choice options listed are of comparable clinical efficacy. The choice of device should be made **with** the patient based on compliance needs, inspiratory effort, inhaler technique, patient preference and ability to make a seal around the mouthpiece.

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Consider referral to specialist services is any of:

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Diagnostic uncertainty	**COPD primarily causing limiting breathlessness** (≥ MRC 4) rather than exacerbations and no other significant exercise limitation. **Lung reduction surgery** may be considered
Rapid deterioration ≥500ml fall in FEV1 over 5 years	**Frequent exacerbations** ≥ **3** exacerbations annually ± pseudomonas aeruginosa in sputum to rule out bronchiectasis and/or to consider macrolides/roflumilast in secondary care
Suspected **cor pulmonale**	**COPD and continued exacerbations with blood eosinophil levels < 0.15 x10^9/L** Lower blood and sputum eosinophils are associated with greater presence of proteobacteria, notably haemophilus and increased bacterial infections and pneumonia where ICS may be detrimental
Patient **<40 years old** ± FHx of α-1 antitrypsin deficiency	
COPD with co-existing asthma requiring higher dose ICS i.e. not suitable for closed triple inhalers	Requires **Oxygen assessment** Baseline O2 ≤92% on air Can be **referred directly to O2 nurses** if respiratory consultant review in last 1 year
Appropriate for management by **Community COPD Specialist Nurses** – referral via SPA	Appropriate for **Pulmonary rehabilitation** - referral via SPA MRC ≥ 3 or recent hospital admission unless recent MI/unstable angina or unable to walk

Consider care planning conversations alongside active treatment/symptom control and/or referral to **palliative care** if clinically appropriate

Written by Deborah Leese (Lead Pharmacist Respiratory, SYICB (Sheffield) and Dr Rod Lawson (Respiratory Consultant, STH)
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