

Barnsley Mucolytic Prescribing Guidance

Background

- The antioxidant agents N-acetylcysteine (NAC) and carbocisteine, also known as mucolytics, may reduce exacerbation frequency and the duration of disability in people with chronic obstructive pulmonary disease (COPD).
- NICE specifically recommends mucolytic therapy only in people with stable COPD who have a chronic cough productive of sputum and states that mucolytics should not be used routinely to prevent exacerbations in people with stable COPD.¹
- Evidence available shows that it's difficult to predict which patients will benefit from mucolytic agents and therefore they should be prescribed on a trial basis only and stopped if there is no perceived benefit.²

Prescribing

There is no evidence for the prescribing of one mucolytic in favour of the other.

Which mucolytic?

- For **acetylcysteine**, prescribe as **NACSYS®** brand (cost £5.13 for 28 days), recommended dose of ONE sugar free effervescent tablet of 600 mg once daily (NB do not prescribe as 600mg capsules as these have a significantly higher cost).

NACSYS® is more cost effective than carbocisteine if a mucolytic in liquid form is required.

- For **carbocisteine** the manufacturer recommends a starting dose of 2250 mg in divided doses, (to be prescribed as 2x 375mg capsules three times a day, cost £4.00 for 28 days), reducing to 1500 mg daily in divided doses when a satisfactory response is obtained (e.g. 2x375mg capsules twice daily or 1x375mg capsules four times daily, cost £2.66 for 28 days).

375mg capsules are to be used first line as these are more cost effective than other formulations of carbocisteine (750mg capsules have a significantly higher cost).

Where a liquid formulation of carbocisteine is required, carbocisteine sachets 750mg/10ml sugar-free is the most cost-effective product (cost £21.56 for 28 days at starting dose of 2250mg daily, £14.37 for 28 days at reduced dose of 1500mg daily).

Carbocisteine 250mg/5ml oral solution sugar-free (cost £35.24 for 28 days at 2250mg daily, £23.49 for 28 days at 1500mg daily) and 750mg/5ml oral solution sugar-free (cost £51.43 for 28 days at 2250mg daily, £34.29 for 28 days at 1500mg daily) have a higher cost.

Prescribe acetylcysteine with caution to:

- People with a history of peptic ulceration
- Patients on a sodium-restricted diet (e.g., patients with cardiovascular and/or renal disease). NACSYS® 600 mg effervescent tablets contain 115 mg of sodium per dose in the form of sodium hydrogen carbonate. This amount of sodium is equivalent to 4.6% of the DAILY total maximum intake of sodium recommended by the British Heart Foundation (the recommended daily sodium intake for adults is less than 2.5g per day.⁴)

NB: Take care with acetylcysteine when prescribing with other effervescent medicines or antibiotics:

- The effervescent solution created using acetylcysteine should not be mixed with other drug solutions
- If oral antibiotics are required, these should be taken two hours before or after acetylcysteine

Do not prescribe carbocisteine to:

- People with active peptic ulceration
- People with asthma or respiratory failure
- Women who are pregnant or breastfeeding

Prescribe carbocisteine with caution to:

- People with a history of peptic ulceration or those taking concomitant medications known to cause gastrointestinal bleeding

Review patients that have been prescribed carbocisteine or NACSYS® for longer than 4-8 weeks to determine whether they are achieving any benefit from treatment (improved expectoration and reduced discomfort from retained secretions):

- Stop treatment in patients in whom no benefit is apparent.
- For patients who benefit from the mucolytic, continue NACSYS® or for carbocisteine, reduce the dose from the treatment dose of 2x375mg capsules TDS to the recommended maintenance dose of 1500mg daily (e.g. 2x375mg capsules BD or 1x375mg capsules QDS) and continue.

Refer to the Mucolytic Therapy Pathway on page 3

References

1. NICE CKS COPD, November 2019: <https://cks.nice.org.uk/chronic-obstructive-pulmonary-disease#!scenarioRecommendation:5> Accessed May 2020
2. Global Initiative for Chronic Obstructive Lung Disease, GOLD, 2019 report: <https://goldcopd.org/wp-content/uploads/2018/11/GOLD-2019-v1.7-FINAL-14Nov2018-WMS.pdf> Accessed May 2020
3. Drug Tariff June 2022. Available at: <https://www.drugtariff.nhsbsa.nhs.uk/#/00818824-DC/DC00818532/Part%20VIII%20products%20C> Accessed July 2022
4. British Heart Foundation. Available at: <https://www.bhf.org.uk/information-support/support/healthy-living/healthy-eating/salt> Accessed August 2022

Development Process

Endorsed by the Area Prescribing Committee on 10th August 2022.

MUCOLYTIC THERAPY PATHWAY

