Commissioning Support
N-Acetylcysteine
(Aceteff®, generic N-acetylcysteine, NACSYS®)

For the treatment of hypersecretion of mucus in respiratory disorders

Commissioning guidance:

Commissioners may wish to bear the following in mind when considering the commissioning of N-acetylcysteine products licensed as mucolytic treatments:

- In a situation where a licensed product has become available for a previously unlicensed indication, the MHRA advise that the licensed product should be used where possible. Use of unlicensed medicines should only continue in cases of special clinical need at the discretion of the prescriber.[1,2]
- Treatment duration is specified for one N-acetylcysteine formulation (200 mg oral powder); the duration of treatment is dependent on the nature and severity of the illness, and should be decided by the clinician initiating treatment. There is no such restriction in the NACSYS Summary of Product Characteristics (SPC). Local specialist opinion also recommends that treatment should be reviewed regularly and stopped if no symptomatic benefit has been achieved.
- Given the considerable cost differential between licensed products, prescribing by brand is advisable; selecting the brand with the lowest acquisition cost.

Efficacy

- Results from four systematic reviews showed that N-acetylcysteine was more effective than placebo in preventing exacerbations in people with chronic bronchitis or chronic obstructive pulmonary disease (COPD); see efficacy section below.
- There were no published direct comparisons of N-acetylcysteine with another mucolytic treatment. Indirect comparison in the Cochrane review (four carbocisteine trials were included) found that effect sizes relating to numbers of exacerbations per participant per month were not affected by type of mucolytic or dose.
- There were also no comparisons of mucolytic treatments with other therapies for the prevention of exacerbations e.g. long-acting bronchodilator plus inhaled corticosteroids.
- Mucolytics are included in the NICE guidance on COPD and in the GOLD guidelines. The NICE guideline development group expressed a concern that mucolytics should not routinely be used to prevent exacerbations in people with stable COPD in preference to other treatments that may be more effective[7].

Safety

- Adverse events were mild, and mostly gastrointestinal in nature.
- Stey *et al*.[11] reported that 10.2% of N-acetylcysteine-treated participants had dyspepsia diarrhoea or heartburn, compared with 10.9% of placebo-treated participants.
- There were no significant differences between N-acetylcysteine and placebo for the numbers of patients reporting adverse events, or withdrawing due to an adverse event.[11]

Cost

Across the NHS England West Midlands region, the average prevalence of diagnosed COPD is 1.86% and there are 74,366 patients in COPD disease registers.[12] According to a study in the Netherlands, about 13% of patients with COPD may have excessive sputum production and chronic cough requiring treatment with a mucolytic.[13]

The current prices (per patient per 30 days) of N-acetylcysteine products are listed below (MIMs August 2018):

- Aceteff® 600 mg effervescent tablet £ 89.50
- Generic 200 mg oral powder £ 337.50
- NACSYS® 600 mg effervescent tablet £ 5.50

Patient factors

- The use of N-acetylcysteine may be of benefit in terms of reducing pill burden in some patients. Two of the newly licensed formulations (Aceteff® and NACSYS®) are taken once daily unlike carbocisteine, where the recommended dose is 2 capsules three times daily, decreasing to 1 capsule four times daily once a satisfactory response has been obtained.

References

1. Birse M. Supply of unlicensed medicines when an equivalent licensed product becomes available. MHRA Inspectorate 2015
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3. Dunelm Pharmaceuticals Ltd. Aceteff 600 mg Effervescent tablets. MHRA 2017

NICE has accredited the process used by the Midlands Therapeutics Review and Advisory Committee to produce Commissioning support summaries. Accreditation is valid for 5 years from 7 March 2017. More information on accreditation can be viewed at www.evidence.nhs.uk

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4. Acetylcysteine 200mg Powder for Oral Solution. EMC 2017
5. NACSYS 600mg Effervescent Tablets. EMC 2017
6. Global strategy for the diagnosis, management, and prevention of COPD. GOLD 2018
7. National Clinical Guideline Centre. Chronic obstructive pulmonary disease: Management of chronic obstructive pulmonary disease in adults in primary and secondary care. NICE 2010
8. Poole P et al. Cochrane Database of Systematic Reviews 2015
9. Grandjean EM et al. *Clin Ther* 2000; 22(2):209-221.
10. Rand Sutherland E et al. *COPD* 2006; 3:195-202.
11. Stey C et al. *Eur Respir J* 2000; 16:253-262.
12. Quality and Outcomes Framework 2016/17 results. NHS Digital 2017
13. Lahousse L et al. *Eur Respir J* 2017; 50(2).

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