



## British Thoracic Society National Bronchiectasis Audit 2011

Adam T Hill, Sally Welham, Kerry Reid, Christine Bucknall

Thank you to everyone who participated in the second BTS secondary care audit of non-cystic fibrosis bronchiectasis. The audit captured data during the period from 1 October 2011 to 30 November 2011. Standards for the audit were drawn from the BTS Guideline for non-CF Bronchiectasis which is available from:

[http://www.brit-thoracic.org.uk/clinical-information/bronchiectasis/bronchiectasis-guideline-\(non-cf\).aspx](http://www.brit-thoracic.org.uk/clinical-information/bronchiectasis/bronchiectasis-guideline-(non-cf).aspx).<sup>1</sup>

We present the gold standards and the results from the National Audit.

### Patient profile

There were 2,404 records throughout the UK from 93 institutions. 62% of those participated were female with a mean (SD) age of 64 years  $\pm$  SD (16). From the sputum microbiology in the preceding year *Pseudomonas aeruginosa*, MRSA or enteric gram negative organisms (latter if isolated on two or more occasions (e.g. E Coli)) were isolated in 26%. In the group with *Pseudomonas aeruginosa* or enteric gram negative organisms, 18% were resistant to ciprofloxacin and 9% to gentamicin. In the last year the mean (SD) number of exacerbations was 2.6 (2.5).

### Standard 1

**90% of patient diagnosed with bronchiectasis should have had the diagnosis confirmed with a chest CT.**

In this audit, 93% were diagnosed with a CT of the chest, 1% by bronchogram, 2% had a clinical diagnosis only and 4% there was no data.

The first standard was met.

### Standard 2

**90% of patients diagnosed with bronchiectasis should see a respiratory physiotherapist.**

In this audit, 69% said their patient had seen a respiratory physiotherapist, 18% said no and in 14% there was no data.

The second standard was **not** met which is in keeping with clinical experience that not all patients with bronchiectasis have seen a respiratory physiotherapist to be taught chest clearance techniques.

### Standard 3

**All patients being seen should have a record of cough, sputum purulence, estimated or measured 24 hour sputum volume and breathlessness when clinically stable.**

In this audit, 73% recorded cough, 66% sputum colour, 54% 24 sputum volume and 62% breathlessness.

The third standard was **not** met. These standardised questions allow a consistent assessment to help the ongoing management of such patients.

### Standard 4

**All patients diagnosed with bronchiectasis should have their immunoglobulins and protein electrophoresis checked along with Immunoglobulin E (IgE) and IgE to aspergillus or skin prick testing to aspergillus and for those aged <40 years old tests to exclude cystic fibrosis (CF).**

In this audit, 73% had their immunoglobulins checked, 60% had serum sent for protein electrophoresis, 62% had IgE measured and 54% had aspergillus fumigates RAST or skin prick test to aspergillus. For those aged <40, 33% had CF gene analysis and 46% had a sweat test carried out.

The fourth standard was **not** met. This is an area that would merit improvement to standardise baseline investigations in secondary care for all patients with bronchiectasis. The management of patients may differ if an immunodeficiency or CF was identified.

### Standard 5

**All children who are old enough (usually age over 5 years) and adults should have measures of FEV<sub>1</sub>, FVC and PEF. Repeat assessment of FEV<sub>1</sub>, FVC and PEF should be made at least annually in those patients attending secondary care. FEV<sub>1</sub> and FVC should be measured before and after intravenous (IV) antibiotic therapy as this may give objective evidence of improvement. Spirometry should be measured in all patients before and after commencing long term oral or nebulised antibiotic therapy.**

In this audit, 30% had PEF measured and 55% had spirometry measured at day of consult. 17% had received IV antibiotics in the past 1 year. For patients that received IV antibiotics, 22% had spirometry assessed before and after a course of IV antibiotics, 56% did not and 22% there was no data. 10% had received nebulised antibiotics for more than 28 days within the past 12 months. Of those receiving nebulised antibiotics, 61% had spirometry checked at the start and later on during the treatment, 13% did not and 26% there was no data. On those that were on nebulised antibiotics, 83% had spirometry checked at least 6 monthly.

The fifth standard was **not** met. Spirometry may be useful to monitor disease progression and response to treatments.

### Standard 6

This was a snapshot view on the frequency of what long term patients were being prescribed. 78% were on inhaled corticosteroids with a mean (SD) dose of 1094 (679) mcg/day. This is despite the guidelines not recommending the long term use of inhaled steroids unless there is clear clinical benefit or those with co-existent asthma or COPD. The audit did not provide any data on these.

Regarding bronchodilators, 67% were on a short acting beta 2 agonist and 9% were on a short acting anticholinergic. 62% were on a long acting beta 2 agonist and 30% on a long acting anticholinergic.

For agents that improve mucociliary clearance 30% used carbocysteine, 8% nebulised saline (37% used 0.9% saline and the remainder used higher concentrations varying from 3-7%), 0.4% used inhaled mannitol and 0.2% nebulised DNAase.

Regarding long term antibiotics 33% used long term oral antibiotics (>28 days) and 10% nebulised antibiotics (76% nebulised colomycin, 12% gentamicin and 6% tobramycin).

### Standard 7

**90% of patients with an exacerbation should have a sputum sample sent for microbiological culture prior to empirical antibiotic treatment.**

In this audit, 57% did, 33% did **not** and 10% no data.

The seventh standard was not met. Monitoring sputum microbiology is key to providing appropriate antimicrobial prescribing.

### Standard 8

**Pulmonary rehabilitation should be offered to individuals who have MRC grade three breathlessness affecting their activities of daily living.**

In this audit, 52% this was not applicable and 16% no data. 15% had been referred but 13% had not. 5% were unable to participate in pulmonary rehabilitation.

The eighth standard was **not** met. Pulmonary rehabilitation in such patients has the potential to improve patients exercise capacity and general wellbeing.

### Summary

This national audit has provided a key snapshot how non-CF bronchiectasis is managed in secondary care. The majority of standards were not met. The profile of bronchiectasis has been very low and it is hoped that the implementation of national guidelines, audit and research these will raise the profile of the disease. The standards from the BTS guideline would be good quality indicators and will be useful to monitor in future audits.

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### Reference

1. British Thoracic Society guideline for non-CF bronchiectasis. Pasteur MC, Bilton D, Hill AT; British Thoracic Society Bronchiectasis non-CF Guideline Group. Thorax. 2010 Jul;65 Suppl 1:i1-58. Review.