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Bronchiectasis and non-tuberculous mycobacterial pulmonary infection

We read with great interest the paper by Wickremasinghe *et al* on the prevalence of non-tuberculous mycobacteria (NTM) in patients with bronchiectasis.[1] They showed that the prevalence of NTM was uncommon (only 2%) both in 50 newly referred patients and 50 follow up patients. However, the authors stated in the Discussion that ''it is now our practice to screen our patients routinely once a year'' because a large number of NTM isolates (28%) were detected by routine surveillance in their retrospective analysis of 71 patients with NTM sputum isolates.[1]

NTM pulmonary infection associated with bronchiectasis is increasing worldwide.[2] However, should routine periodic screening for NTM infection be necessary for all adult patients with bronchiectasis? Is sputum culture a sufficiently sensitive method to exclude active NTM infection? Are negative sputum studies sufficient to dissuade one from the diagnosis of active NTM infection?

Bronchiectasis in general can manifest in one of two forms: as a local or focal obstructive process of a lobe or segment of a lung or as a diffuse process involving most of the lungs.[3] In patients with diffuse bronchiectasis the disease is more likely to be associated with specific causes such as infection (NTM infection, *Aspergillus* infection), congenital conditions (primary ciliary dyskinesia, cystic fibrosis), or immunodeficiency.[3]

High resolution computed tomography (HRCT) has proved to be a reliable and non-invasive method for the diagnosis of bronchiectasis. The pattern and distribution of abnormalities revealed by HRCT scanning are influenced by the underlying cause of bronchiectasis. Multiple small nodules (and sometimes cavity or cavities) combined with diffuse (or widespread) bronchiectasis are reported to be the typical HRCT findings of NTM pulmonary infection associated with bronchiectasis,[4–6] which was also suggested by Wickremasinghe *et al*.[1] In patients with these characteristic HRCT findings, 34–50% of patients have active NTM pulmonary infection, especially *Mycobacterium avium* complex infection.[4 6] These abnormalities are usually confined to, or most severe in, the right middle lobe and the lingular segment of the left upper lobe in NTM pulmonary infection. This presentation is therefore now referred to as ''nodular bronchiectatic disease''.[2] Multiple small nodules around ectatic bronchi on the HRCT scan have been reported to represent peribronchial granuloma and caseous material.[4 5]

The diagnosis of this type of NTM pulmonary infection is often delayed because symptoms are mild and excretion of NTM in sputum is intermittent with few colonies retrievable in culture. Many patients therefore require bronchoscopic examination or lung biopsy for diagnosis of NTM pulmonary disease.[7] In clinical practice, HRCT scans should therefore be performed in patients with suspected bronchiectasis. NTM pulmonary infection could be suspected in selected patients who have multiple pulmonary nodules combined with diffuse bronchiectasis on the HRCT scan. Multiple sputum specimens should be examined in these patients. However, the poor sensitivity of sputum cultures suggests that, in situations where multiple sputum cultures are non-diagnostic, bronchoscopy should be performed to adequately exclude or diagnose NTM pulmonary disease.

We consider that there is no clear evidence to support the routine surveillance for NTM infection in all adult patients with bronchiectasis.

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Funding: none.

Competing interests: none.

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Authors' reply

We would agree with much of the content of the interesting letter from Drs Koh and Kwon, particularly the details of *Mycobacterium avium* complex infection and the use of CT scans in making the diagnosis.[1] We have also had experience of bronchoscopy and biopsy being necessary to make the diagnosis in some cases with suggestive radiology. The one point on which we disagree is the value of routine annual screening of sputum for acid fast bacilli, and our practice of sending three samples in all patients with a deterioration in their clinical condition which is not explained or not reversed by usual treatment.

The value of this practice will require a large prospective study with cost-benefit analysis and attention paid to false negative results. However, we would argue in favour of this approach for the following reasons. Most patients have a CT scan when bronchiectasis is first suspected. Our study[2] has shown that these patients may (rarely) in the future contract NTM infection which adversely affects their condition.

As Drs Koh and Kwon state, this may be insidious and go unsuspected for long periods. In our study[2] most patients with infection (rather than colonisation) had a heavy bacterial load (smear positive) which would make it likely that routine screening would detect the patient. Repeat CT scans in all cases that might raise suspicion of NTM is impractical. Lastly, about 50% of cases with diffuse bronchiectasis remain idiopathic even after full investigation,[3] and our understanding of the pathogenesis of NTM infection is just beginning to increase. The data produced from closely studying NTM in our population of bronchiectatic patients may provide useful information in the future.

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CORRECTION

doi: 10.1136/thx.2005.47803corr1

The paper entitled ''Anticholinergics in the treatment of children and adults with acute asthma: a systematic review with meta-analysis'' by G J Rodrigo and J A Castro-Rodriguez (10.1136/thx.2005.040444) has been published previously on 17 June 2005 as a Thorax Online First article but under the incorrect DOI (10.1136/thx.2005.047803). The publishers apologise for this error. The definitive version of the article can be found at the following citation: *Thorax* 2005;**60**:740-6.

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