Which children with persistent cough should be regarded as persistent bacterial bronchitis?

We read with interest the article by Donnelly et al. on outcomes treated for persistent bacterial bronchitis. They reported on 81 children with persistent cough for a period of 1 month who were referred for a review. This is a very comprehensive review article. The authors defined persistent bacterial bronchitis as a wet cough present for >1 month that resolved with appropriate antibiotic treatment. They concluded that persistent bacterial bronchitis is often misdiagnosed as asthma, and that the number of patients is increasing because of the reduction in prescribing of antibiotics in the community. Prolonged antibiotic prescription is an appropriate and safe approach to treatment and 13% needed treatment for ≥3 months, which cannot be considered a short course. In addition, almost half of the patients required at least 6 weeks of antibiotic treatment. In over half of the children with persistent wet cough lasting >1 month should be labelled first as persistent bacterial bronchitis and that antibiotics should be used for at least 6–8 weeks to prevent progression to bronchiectasis in such children.

There are a number of issues in this study on which we would like to comment. First, the authors defined persistent cough as a cough lasting >1 month, which means that patients with post-infectious cough might have been included in their analysis. However, this type of persistent cough may last >1 month but resolves progressively without any specific treatment. In fact, this was defined as ‘‘period effect’’ in reports defining and evaluating cough in children. Second, almost 60% of their patients were symptomatic before 2 years of age and almost half also had wheezing and shortness of breath at referral for >1 year, which is very similar to a classic asthma history. These children were reported to be symptomatic despite anti-asthmatic treatment. However, the authors did not mention whether the children had been treated effectively with asthma medications (ie, with an appropriate dose and for an appropriate duration). They also did not state whether they checked for problems with compliance with asthma treatment before they started to treat them with an antibiotic. Third, 11% of children diagnosed as having persistent bacterial bronchitis, which was expected to resolve with antibiotics, were still symptomatic at referral although they were on antibiotic treatment. In addition, almost half of the patients required at least 6 weeks of antibiotic treatment and 13% needed treatment for >3 months, which cannot be considered a minority. Most importantly, this approach may mislead general practitioners and paediatricians both to overprescribe and to the inappropriate use of antibiotics for all children with persistent cough lasting >1 month. Most of these issues have also been previously commented on by Rubin in an editorial.

On the other hand, chronic productive cough can be a manifestation of ‘‘difficult asthma’’ and so-called bacterial bronchitis which may be present coincidentally with asthma in children.

Moreover, Donnelly et al. also showed that one-third of their patients had asthma concomitant with persistent bacterial bronchitis. In fact, this group of children is a considerable diagnostic challenge. As clinicians, which children with persistent cough should we not overtreat with either inhaled steroids or antibiotics for a long time?

We believe that the conclusions of the study by Donnelly et al. should be interpreted with caution until they are investigated in detail in well designed, randomised, placebo-controlled, prospective studies. This approach would put such studies on a more scientific and convincing basis.

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Competing interests: None.

References

Authors’ reply
We thank Drs Bakirtas and Turktas for their interest in our paper, although it is not entirely clear from their letter whether they doubt the condition exists or whether they feel the approach to management we adopt is incorrect.

Persistent bacterial bronchitis/persistent endobronchial infection without cystic fibrosis or significant immunodeficiency now appears as an important cause of persistent cough in paediatric cough guidelines in the UK (in press), Australia and North America. What is less clear is how patients should be managed at different stages of the condition. However, their letter does permit us the opportunity to discuss the difficulties in ensuring children with a persistent wet cough (as opposed to the typical dry ‘‘post-viral/non-specific’’ cough) are correctly managed. Unfortunately, the lungs have a very limited repertoire of responses to an external insult. Inflammation of the conducting airways provoked by a stimulus such as an acute viral infection, persistent endobronchial infection, asthma or recurrent aspiration will induce a cough, frequently lead to mucus hypersecretion and may induce noisy breathing. Young children with frequent viral infections and recurrent endobronchial infection look very similar on superficial assessment, with parents reporting a persistent cough particularly at nights and/or exercise and symptoms getting worse with colds. Trying to correctly identify the cause of cough is one of three categories: (1) incorrect diagnosis; (2) asthma and co-morbidity such as persistent endobronchial infection; or (3) failure to take their medication correctly either due to regimen compliance or device compliance (competence and contrivance). The implication that failure to assess children correctly makes our report invalid is a little disappointing. As a group, we have undertake an amount of research into factors affecting drug delivery (both device and, more importantly, patient factors) and in trying to improve our characterisation of phenotypes of respiratory disease. We take issues of non-compliance in asthma and co-morbidity very seriously.

One reviewer of the original paper commented that it was easy to make the diagnosis of...
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Thorax 2007 62: 921-922

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