

EDITORIAL

Diagnosing pneumonia accurately in the community – is it necessary?

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Problems remain regarding the diagnosis and management of respiratory tract infections (RTIs) in primary care. In this issue of the *PCRJ*, Evertsen *et al*¹ report a review of electronic records for adult patients consulting with RTI in an outpatient integrated health care setting in Wisconsin. They conclude that documented fever and abnormal breath sounds were the best predictors for labelling an acute RTI as pneumonia and for arranging a chest radiograph (CXR). However, whilst over 90% of those diagnosed with pneumonia had undergone a CXR, only about half were 'positive', as were nearly one in ten labelled as bronchitis or upper RTI. Furthermore, nearly every patient diagnosed as having either pneumonia or bronchitis received an antibiotic (98.5% and 95%, respectively), as did over 42% labelled with an upper RTI.

Most doctors agree that patients with pneumonia should be prescribed antibiotics and that the accurate diagnosis of pneumonia requires the defining presence of radiographic shadowing. So which patients with RTI should be X-rayed? The recently updated British Thoracic Society (BTS) Guidelines for the management of community acquired pneumonia (CAP)² emphasise the crucial importance of obtaining a CXR rapidly in patients ill enough to require hospital referral with suspected pneumonia in order to help confirm or refute the diagnosis. This is straightforward in a hospital setting, but for many doctors working in primary care, obtaining a CXR can add potential delays in diagnosis and management and extra workload, as well as it being costly and inconvenient for the patient. An additional problem is that consultations for acute RTI are extremely common in primary care, but only a small proportion (5-12%) of patients will have radiographic evidence of pneumonia.^{2,3} Potentially, very many patients could be x-rayed to detect the few with pneumonia. For this reason, the primary care summary of the BTS Guidelines on the management of CAP, recently published in this journal,⁴ uses a pragmatic definition of CAP: symptoms of an acute lower respiratory tract illness together with new focal chest signs and evidence of systemic illness, with no other explanation for the illness – clinical features which have modest discriminatory powers to identify the presence of radiographic pneumonia. It is reassuring therefore that Evertson *et al.*¹ found that their doctors used the presence of rales (crackles), rhonchi and fever to make a diagnosis of pneumonia.

The European Respiratory Society (ERS) and North American guidelines^{5,6} suggest that patients suspected as having pneumonia in the community should receive a CXR. The argument is that clinical findings are of only limited value in diagnosing CAP, so doctors should strive to make a firm diagnosis by CXR.⁷ This may be an attractive argument theoretically, but is this practical and would the result really make a crucial difference in the general practitioner's (GP's) decision to start or stop antibiotics, as well as patient acceptance? The fact that nearly everyone received antibiotics in this study,¹ irrespective of the label of bronchitis or pneumonia or the CXR result, suggests that obtaining a CXR was an ineffective management strategy for influencing antibiotic prescribing. There is other evidence that X-raying all patients with suspected pneumonia is of little value.³ It seems more sensible to X-ray selected patients with lower RTI, including those in whom the diagnosis is in doubt, those who are not improving satisfactorily, and those who are at risk of underlying lung disease such as lung cancer.²

The very high rate of antibiotic prescribing in the non-pneumonic groups in the

Wisconsin study (groups that are thought usually to require symptomatic treatment only^{8,9}) is not limited to North America. A recent pan European study¹⁰ found that the antibiotic prescribing rate for acute cough in some regions was nearly as high, although the mean prescribing rate was 53% and 21% for the lowest centres. Unnecessary antibiotic prescribing has many adverse consequences.¹¹⁻¹³ In the UK, antibiotic prescribing rates for respiratory infections have been falling since the mid-1990s following concerted efforts to influence public and medical dependence on unnecessary antibiotic usage, and this has been linked to a secondary reduction in consultations, especially for upper RTIs.^{14,15} However, some patients with RTI will benefit from antibiotics and should receive them promptly, and there is some suggestion that the pendulum has swung too far away from the use of antibiotics with a resulting increase in mortality and morbidity for lower RTIs.^{16,17} Identifying such patients at the initial consultation is crucial. However, there would be considerable practical problems for many GPs in using a 'positive' CXR report to inform the initial prescribing decision, and most will have to continue to depend on clinical judgment aided by evidence from good studies.

Evertson and colleagues recommend further research. We agree, but what we need are well designed, prospective studies to provide evidence to help the management decision process when a patient consults with acute respiratory symptoms in the community setting. Are the symptoms and signs caused by acute infection, or is another diagnosis more likely? Does the patient warrant antibiotic therapy? If yes, which one, or a combination? For how long, and should it be started immediately, or should a delayed antibiotic prescription strategy be tried?^{18,19} How ill is the patient and does the patient require early review in the community or direct hospital referral? Is there an indication to arrange a CXR or other investigations now or at a later stage? What label the GP uses – pneumonia, acute bronchitis or LRTI – is less important.

Conflict of interest declaration

CN has no conflicts of interest.

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