

Cochrane Corner

Antibiotics for chronic obstructive pulmonary disease

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The benefit of antimicrobial therapy for patients with an acute exacerbation of chronic bronchitis (AECB) remains controversial for two main reasons. First, the distal airways of patients with chronic bronchitis are persistently colonised, even during clinically stable periods, with the same bacteria that have been associated with AECB. Second, bacterial infection is only one of several causes of AECB. These factors have led to conflicting analyses on the role of bacterial agents and the response to antimicrobial therapy of patients with AECB. An episode of AECB is said to be present

when a patient with chronic obstructive pulmonary disease (COPD) experiences some combination of increased dyspnoea, increased sputum volume, increased sputum purulence and worsening lung function. While the average COPD patient experiences two to four episodes of AECB per year, some patients, particularly those with more severe airway obstruction, are more susceptible to these attacks than others. Bacterial agents appear to be particularly associated with AECB in patients with low lung function and those with frequent episodes accompanied by purulent sputum. Over the

past 50 years, virtually all classes of antimicrobial agents have been studied in AECB. Important considerations include penetration into respiratory secretions, spectrum of activity and antimicrobial resistance. These factors limit the usefulness of drugs such as amoxicillin, erythromycin and trimethoprim-sulfamethoxazole. Extended-spectrum oral cephalosporins, newer macrolides and doxycycline have demonstrated efficacy in clinical trials. Amoxicillin-clavulanate and fluoroquinolones should generally be reserved for patients with more severe disease.¹

Antibiotics for various stages of chronic respiratory disease

	Success	Evidence	Advantages	Disadvantages
Acute exacerbations of chronic obstructive pulmonary disease	Presence of purulent sputum in severe airways disease. Antibiotics can shorten symptoms and be cost effective	Review ¹	Shortens duration of symptoms	Development of resistance
Prophylactic antibiotics for stable chronic obstructive pulmonary disease	None	Review ²	None	Development of resistance
Prophylactic antibiotics for stable chronic bronchitis	None	Cochrane review ³	None	None reported

References

1. Macnee W, Calverly PM. Chronic obstructive pulmonary disease. *Thorax* 2003; 58:261-5
2. Kerstjens H, Postma D. Chronic obstructive pulmonary disease. *Clin Evid.* 2002 Jun; (7):1344-57
3. Staykova T, Black P, Chacko E, Ram FSF, Poole P. Prophylactic antibiotic therapy for chronic bronchitis (Cochrane review). In: *The Cochrane library*, issue 2, 2003. Oxford: Update Software.

Members of the Royal New Zealand College of General Practitioners can have access to the full reviews by contacting Cherylyn Pearson at the College in Wellington. For the access codes to the Cochrane library contact cpearson@rnzcg.org.nz at the College. Access to clinical evidence can be obtained at <http://www.clinicalevidence.org/>

Addendum to previous Cochrane Corner¹

There have been a number of requests for the dose of Nortriptyline needed for smoking cessation.

The dosing for the study by Prochazka et al. was to start 10 days before the quit day with 25mg of Nortriptyline increasing to two capsules per day after three days and finally three capsules per day. The dose of 75mg needs to be continued for eight weeks after the quit day and then titrated down to zero over about 14 days. Another study by

Hall et al. (1998) had a maximum dose of 100 mg/day.²

The numbers needed to treat were both about 10 patients per one patient to quit at six to 16 months. The advantage of Nortriptyline over the unfunded Bupropion is that it is fully funded by Pharmac. Many of my patients cannot afford the initial outlay to purchase Bupropion and hence are attracted to the chance to obtain a prescription for \$3 (with a community services card). Many of

them have already been unsuccessful with nicotine patches.

A doctor from the National Health Committee has checked with Medsafe and their advice was that if there is a Cochrane review supporting its use then there is little risk in practitioners prescribing it. Pharmac were also consulted and stated that it would fund it for smoking cessation.

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References

1. NZFP 2002; 29:121
 2. Hughes JR, Stead LF, Lancaster T. Antidepressants for smoking cessation (Cochrane Review). In: The Cochrane Library, Issue 2, 2002. Oxford: Update Software.
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