

# Reducing antibiotic use for acute bronchitis by giving patients written information

Macfarlane J, Holmes W, Gard P, Thornhill D, Macfarlane R, Hubbard R. Reducing antibiotic use for acute bronchitis in primary care: blinded, randomised controlled trial of patient information leaflet. *BMJ* 2002;324:91-4.

**Background:** Acute bronchitis is one of the most common reasons for patients to consult their primary care physicians. In up to 75% of cases antibiotics are prescribed, even though firm evidence to justify their use is lacking in many cases.<sup>1</sup> Patients' perception that antibiotics are beneficial creates an expectation that has been shown to have a significant influence on their physicians' prescribing practices.<sup>2</sup> There are many valid reasons, however, for refraining from prescribing antibiotics for this condition, including side effects, cost considerations and concerns about the emergence of resistant microorganisms.

**Question:** Can antibiotic use be reduced among patients with acute lower respiratory tract infection by supplying them with written information about the uncertainty of benefit?

**Methods:** This randomized controlled trial was conducted in 3 suburban general practices in Nottingham, England. Consecutive patients 16 years of age or older were identified as having acute bronchitis if they presented with cough of up to 21 days' duration, had at least 1 of the symptoms of sputum production, dyspnea, wheeze, chest discomfort or pain and had no alternative explanation for the condition such as sinusitis, pharyngitis or new presentation of asthma. Those with pre-existing asthma, chronic obstructive pulmonary disease, heart disease or diabetes were excluded.

Primary care practitioners were instructed to prescribe antibiotics only to patients for whom they felt such treat-

ment was definitely indicated on the day of presentation. Patients for whom antibiotics were not felt to be justified were informed that there was no immediate indication for antibiotics, but they were provided with a prescription, which they were asked to fill only if their symptoms became worse. Members of this group were randomly assigned to receive or not receive a written leaflet that outlined, in greater detail, the nature and expected course of acute bronchitis, the uncertainty of benefit of antibiotics, the adverse effects of the drugs, a list of suggested non-antibiotic remedies and a reminder of which symptoms should prompt them to fill their prescription. Each patient was provided with a sealed package that contained a diary card, instructions, a stamped, addressed return envelope and, depending on group assignment, the written leaflet.

End points included the frequency of antibiotic use and of return visits to the general practitioner. Whether the patient had the prescription filled was ascertained from the diary cards and through follow-up telephone contact by a research assistant blinded to the patients' group status.

**Results:** Over 11 months, 280 patients fulfilled the study criteria and 259 agreed to participate. Of these, 47 were deemed to require antibiotics on the day of presentation. Of the remaining 212 subjects, 106 received the written leaflet. Of those who received the leaflet, 49 (47%) had their prescription filled, as compared with 63 (62%) in the control group (risk ratio 0.76, 95% confidence interval 0.59-0.97,  $p = 0.04$ ). The authors found no evidence of confounding by age, sex, smoking status, symptoms, general practice visited or responsibility for drug payment. The frequency of repeat visits was comparable in the 2 groups: 11 among those who received the leaflet and 14 among

those who did not. None of these patients required referral to hospital.

**Commentary:** This study shows that a simple, inexpensive educational intervention can influence patients' perceptions and expectations and result in decreased use of antibiotics. The intervention, by disclosing the uncertainty involved in the decision to prescribe antibiotics for acute bronchitis, allowed patients to share more fully in the responsibility for the ultimate treatment decision. Although the intervention group had a lower rate of antibiotic use, the usage rate in this group was still high (47%). Whether written information for patients would result in reduced antibiotic use if it was provided without an "optional prescription" but with instructions to see their doctor again if symptoms worsened requires further study.

**Practice implications:** A leaflet that describes more fully the nature and expected course of acute bronchitis and discloses the uncertainty of benefit from treatment with antibiotics appears to reduce the rate of antibiotic use in primary practice without increasing the number of adverse outcomes.

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## References

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