

Review: Antibiotics have a slight beneficial effect on acute bronchitis

Bent S, Saint S, Vittinghoff E, Grady D. Antibiotics in acute bronchitis: a meta-analysis. *Am J Med.* 1999 Jul;107:62-7.

QUESTION

In patients with acute bronchitis, do antibiotics reduce sputum production, cough, or days off work?

DATA SOURCES

English-language studies were identified in MEDLINE (1966 to April 1998) by using the terms drug therapy, bronchitis, and acute disease; the reference lists of relevant articles were reviewed, and experts in the field were contacted.

STUDY SELECTION

Studies were selected if they were randomized controlled trials that compared antibiotics with placebo in patients who had acute bronchitis but no history of chronic lung disease or pneumonia, therapy was given for ≥ 5 days, and effect sizes could be calculated from the data presented.

DATA EXTRACTION

Data were extracted on sample size, patient age, study inclusion and exclusion criteria, antibiotic regimen, and outcome

measures. The main outcome measure was days of sputum production, which was transformed into units of standard deviation for each study.

MAIN RESULTS

8 studies (660 patients) were included and used erythromycin, doxycycline, or trimethoprim-sulfamethoxazole. The overall summary effect size of antibiotic therapy was 0.21 units of standard deviation (95% CI 0.05 to 0.36), equivalent to about half a day less of cough and sputum production than with placebo. Days of purulent sputum, days of cough,

and days lost from work were measured in ≥ 4 trials; antibiotics and placebo did not differ (Table).

CONCLUSION

In patients with acute bronchitis, the use of antibiotics reduces cough and sputum production by about half a day.

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Antibiotics vs placebo for outcomes of acute bronchitis measured by ≥ 4 trials

Outcomes	Number of trials	Weighted mean decrease (95% CI)
Days of purulent sputum	6	0.4 d (-0.1 to 0.8)*
Days of cough	4	0.5 d (-0.1 to 1.1)†
Days off work	6	0.3 d (-0.6 to 1.1)†

*Significant when pooled in units of standard deviation, but not significant in units of days.

†Heterogeneity existed among these studies. Results were not significant.

COMMENTARY

The systematic review by Bent and colleagues shows that antibiotics have marginal benefit in the treatment of adults with acute bronchitis. The results are consistent with those of 2 previous systematic reviews (1, 2). Acute bronchitis is not a trivial illness; for most adults, it lasts ≥ 3 weeks and has a major effect on patients' well-being and daily activities (3). This review suggests that antibiotics may shorten the duration of illness by half a day; but when side effects, costs of treatment, and the "medicalizing" effects of antibiotics are considered, the risks associated with treatment seem to outweigh the benefits.

No symptoms or signs definitely rule in a bacterial diagnosis. It appears that patients' expectations substantially affect the prescribing of antibiotics by family physicians (4).

In addition to evidence about the effectiveness of antibiotics, management strategies used to reduce prescribing and to meet patients' expectations are needed. A U.K. randomized trial is currently evaluating the effectiveness of offering each patient a delayed antibiotic prescription. Furthermore, a patient information leaflet has been shown to be effective for reducing repeated consultations and providing patients with information about the likely course of their illness (5).

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References

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