Evidence Update

Respiratory Tract Infections Series *February 2005*

Are antibiotics effective for treating acute bronchitis?

Antibiotics have modest effects for treating patients with acute bronchitis.

Inclusion criteria

Studies:

Randomized controlled trials which had adequately concealed the allocation.

Participants:

Adults and children with symptoms of cough and productive sputum, or with a physician's diagnosis of acute bronchitis.

Intervention:

Any antibiotic therapy compared with placebo. Other drugs, such as analgesics, antitussives, antipyretics, or mucolytics, were allowed if both groups had equal access.

Outcomes:

Time to resolution of cough, sputum production, and activity limitations; proportion of participants with cough, night cough, productive cough, activity limitations, or abnormal lung examination; global assessment of improvement by clinicians at follow up; and adverse effects.

Results

- 13 trials involving 1914 adults and children were included.
- Participants receiving antibiotics had better outcomes than those receiving placebo. Antibiotics reduced the number of participants at follow up with cough (relative risk 0.64, 95% confidence interval 0.49 to 0.85); abnormal lung findings (RR 0.48, 95% CI 0.26 to 0.89); and with no improvement on physician assessment (RR 0.52, 95% CI 0.31 to 0.87).
- Antibiotics also reduced the duration of cough (weighted mean difference 0.58 days, 95% CI 0.01 to 1.16 days), productive cough (WMD 0.52 days, 95% CI 0.01 to 1.03 days), and feeling ill (WMD 0.58 days, 95% CI 0.00 to 1.16 days).
- No differences between antibiotics and placebo detected in the mean duration of activity limitations or the presence of night cough, productive cough, or activity limitations at follow up.
- There were more adverse effects with antibiotics, but this was not statistically significant (RR 1.22, 95% CI 0.94 to 1.58).

Adapted from Smucny J, Fahey T, Becker L, Glazier R. Antibiotics for acute bronchitis. *The Cochrane Database of Systematic Reviews* 2004, Issue 4. Art. No.: CD000245.pub2. DOI: 10.1002/14651858.CD000245.pub2.

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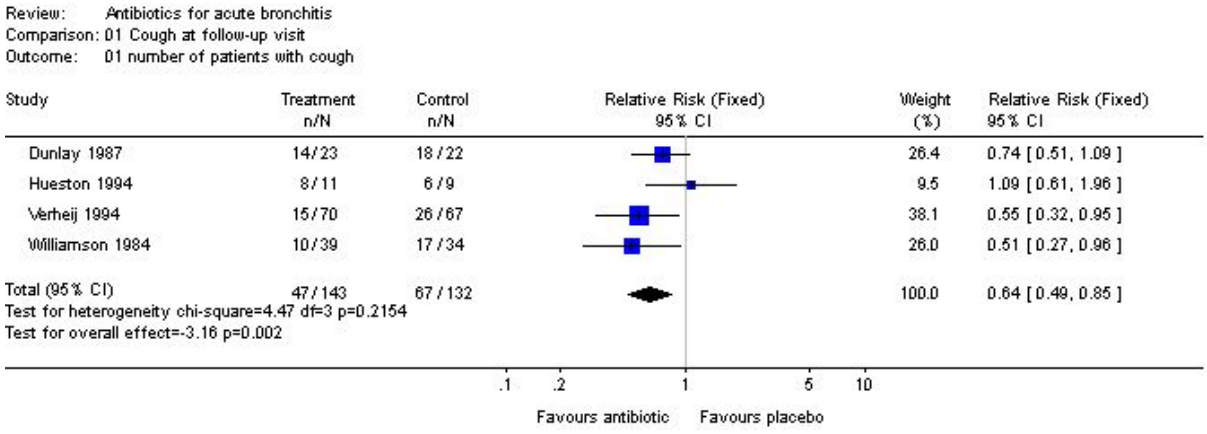

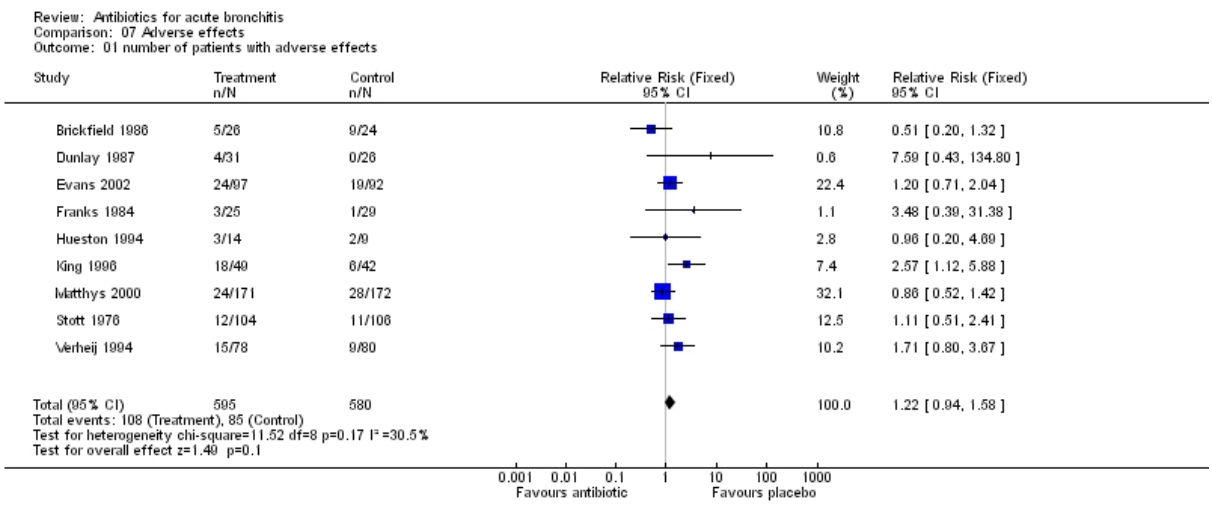

Authors' conclusions

Implications for practice:

Antibiotics may have beneficial effects in acute bronchitis; however, some of the benefits are slight and need to be balanced against costs, adverse effects, and negative effects on antibiotic resistance patterns. There are currently few data on the effects of antibiotics in different groups of patients.

Implications for research:

Adequately powered, placebo-controlled randomized trials are needed to evaluate which patients are most likely to benefit from antibiotic treatment. Patient age, duration and severity of illness, chest examination findings, smoking, and other variables may be important considerations in evaluating the effectiveness of antibiotics.