JFP Journal Club

INHALED ALBUTEROL TO TREAT BRONCHITIS

TITLE: Albuterol metered-dose inhaler in the treatment of acute bronchitis
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Background. Acute bronchitis is a common problem in primary care, but there is controversy about what constitutes appropriate initial therapy. Patients with acute bronchitis and asthma have similar profiles on pulmonary function testing, and some recent reports have suggested that albuterol may reduce the duration of symptoms.

Clinical question. Should we routinely treat acute bronchitis with inhaled albuterol?

Population studied. The patients were similar to those in most family practices. Patients who were 18 to 65 years of age and had productive cough for less than 30 days and no clinical signs of pneumonia were enrolled in two community family practice centers in Kentucky and Wisconsin. Patients who refused participation, were pregnant, were allergic to the study medications, had received antibiotics recently, or had a history of asthma, chronic obstructive pulmonary disease (COPD), or cardiac disease were excluded from the study. The paper does not describe the frequency of different reasons for exclusion, which would have enabled the reader to compare his or her patients with those studied as well as get a sense of the practicality of albuterol.

Study design and validity. The study design is strong. Erythromycin and albuterol were both randomized and placebo-controlled, allowing comparison of the relative impact of both agents. The mechanism of randomization is not described. It is also unclear whether physicians performing the examinations knew the treatment category. The planned sample size was 132, but because a planned statistical review after about one third of the patients had been enrolled showed significant results, the study was terminated early.

Outcomes measured. Subjects kept a diary for 7 days to report cough, ability to perform work, general well-being, side effects, and use of other medications. The details of the scales and whether they had been evaluated for validity and reliability are not described. The subjects were reexamined at 7 days.

Results. Forty-six patients were enrolled; 23 received albuterol inhalers, and 23 received placebo inhalers. The two groups were similar in age, sex composition, cigarette use, presence of fever, and abnormal lung examination, although patients who received albuterol may have been more likely to be wheezing at baseline. All subjects completed follow-up by 8 days. Patients who received albuterol were more likely to return to work by the fourth day (78% vs 52%, $P=.05$) and were less likely to be coughing at the end of 7 days (61% vs 91%, $P=.02$), but there were no differences in general well-being, physical examination at 7 days, or side effects of medications. Controlling for antibiotics did not affect the result. The analysis of the influence of cigarette smoking is unclear. The small size of the sample greatly limits the power of subgroup analysis.

Clinical recommendation. This study provides evidence that inhaled albuterol is well tolerated and modestly reduces the duration of symptoms for acute bronchitis. The major strengths of the study are the similarity of the patients to the patients we see, the randomized, placebo-controlled design, the 100% follow-up, and the use of patient-oriented outcome measures, such as symptom duration and return to work. The major weakness is the small sample size, which greatly limits the subgroup analyses essential for determining the clinical value of the information.

Contemporary management of acute bronchitis is only modestly effective, with most physicians treating symptomatically and using antibiotics for subgroups of patients, eg, those with COPD, soft signs of pneumonia, and those who demand or expect antibiotics. Further study is needed to identify which patients benefit from treatment and to evaluate its cost-effectiveness. In the meantime, this study suggests that it is reasonable to try inhalers: they may help, and they usually will not hurt, which is more than can be said of many of our current treatments for bronchitis.

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