Reducing Inappropriate Antibiotic Use for the Common Cold

Arrol B, Kenealy T, Kerse N. Do delayed prescriptions reduce the use of antibiotics for the common cold? A single-blind controlled trial. J Fam Pract 2002;51:324–8.

Study Overview

Objectives. To determine if a delayed prescription reduces the use of antibiotics for patients presenting with upper respiratory tract infections and desiring antibiotic medication.

Design. Randomized controlled single-blind study with an intention-to-treat analysis.

Setting and participants. 129 patients in a single 15-physician family practice in Auckland, New Zealand. Patients were included if they presented with a new case of the common cold and either requested antibiotics or the family physician believed that they wanted antibiotics. Patients were excluded if they had suspected tonsillitis, sinusitis, bronchitis, or pneumonia. Patients with lower respiratory signs requiring a radiograph, a past history of rheumatic fever, a serious illness, or recent antibiotic treatment also were excluded. Patients were similar in most demographic and symptom characteristics.

Intervention. Participants in the intervention group were given a prescription for antibiotics with instructions to fill the prescription after 3 days if their symptoms failed to resolve. The control group was prescribed an antibiotic and instructed to take it immediately. The antibiotic prescribed was left to the discretion of the physician.

Main outcome measures. The main outcome was percentage of patients using antibiotics after the initial visit. For secondary outcomes, all participants recorded daily temperatures and completed daily symptom checklists for 10 days after the visit. Participants were then telephoned on follow-up days 3, 7, and 10 and asked about their symptoms and temperature. On day 10, patients also were asked about their level of satisfaction with the physician and the visit.

Main results. 129 patients were randomized, with 67 receiving delayed prescriptions and 62 receiving immediate prescriptions. 5 patients withdrew from the delayed group and 1 from the immediate group. Participants who received a delayed prescription were less likely to use antibiotics (48% [95% confidence interval {CI}, 35%–60%]) compared with those given antibiotics with instructions to take immediately (89% [95% CI, 76%–94%]; $P = 0.0001$). Participants in the control group had a slightly increased temperature (0.2°C) compared with those in the delayed use group ($P = 0.039$). There was no statistically significant difference between symptom or provider satisfaction scores ($P = 0.29$).

Conclusion. The use of delayed prescriptions was safe and effective at reducing inappropriate antibiotic usage in patients presenting with the common cold when compared with immediate prescribing. Patients were equally satisfied with either approach.

Commentary

The inappropriate use of antibiotics for upper respiratory tract infections remains a significant problem [1] with many serious consequences, including promoting antibiotic resistance [2], wasting health care resources [3], and exposing patients to possible harmful medication side effects for no added benefit. Despite these concerns, published rates of antibiotic use for the common cold have been as high as 51% [1]. Providers remain wary about refusing antibiotics to their patients that request them for fear of patient dissatisfaction; however, these fears are largely unfounded [4]. Regardless, this remains a significant problem and new strategies to reduce unnecessary antibiotic use are important to explore.

Arrol et al's study investigates delayed prescription writing as a means to reduce antibiotic usage for the common cold. With delayed prescription writing, the patient either is given a prescription and told to fill it after a specified period of time if their symptoms do not resolve or are not given a prescription but told to return for one if their symptoms do not improve. In this study, a 41% reduction was seen in antibiotic use when patients were given a delayed prescription. Furthermore, the symptoms and satisfaction scores of the 2 groups did not differ.

This study has several limitations that could limit its usefulness. First, it was a small study with only 129 participants, so it might have been underpowered to detect differences between the groups with respect to the secondary outcomes. Second, the providers were responsible for recruiting patients

and assessing whether or not their patients had the common cold. Providers might have been inclined to recruit patients that were more likely to follow medical instructions, whether the instructions were to immediately take a medication or not; this would result in a more effective intervention. Also, the investigators did not determine how many patients were excluded or why they refused to participate. Third, no attempt was made to account for clustering at the provider level. Certain providers might be better at explaining the appropriate indications for antibiotic use to patients than others, which may have unduly influenced the study's results. Finally, it is possible that most of the effect could be related to the educational intervention provided by the physicians and not necessarily the delayed prescription intervention.

Applications for Clinical Practice

A strategy of delayed prescription writing might reduce inappropriate antibiotic use for patients who present with the common cold and request antibiotics. However, is if difficult to determine to what degree the study effects were confounded by patient or physician factors.

–Review by Harvey J. Murff, MD

References

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