### Review: delaying a prescription reduces antibiotic use in upper respiratory tract infections


Clinical impact ratings GP/FP/Primary care ★★★★★☆☆

#### Q In patients with upper respiratory tract infections, is delaying a prescription effective for reducing antibiotic use?

#### METHODS

**Data sources:** Medline (1966 to April 2003), EMBASE/Excerpta Medica, the Cochrane Controlled Trials Register, and researchers in the field.

**Study selection and assessment:** randomised controlled trials (RCTs) or clinical controlled trials (published in any language) that compared a delayed with an immediate antibiotic prescription for patients of any age with upper respiratory tract infections. Upper respiratory tract infections included acute cough, sore throats, otitis media, the common cold, and sinusitis. Study quality was assessed using the Jadad scale.

**Outcomes:** Use, consumption, or filling of the prescription and any reported side effects.

#### MAIN RESULTS

4 RCTs (950 patients) and 1 clinical controlled trial met the selection criteria. All the RCTs had Jadad scores ≥3. Duration of delay for prescriptions was 1–7 days. The rates of use (1 RCT), consumption (2 RCTs), or filling (1 RCT) of the prescription were lower in the delayed prescriptions than in the immediate prescription groups (table). 3 RCTs reported an increase and 1 RCT a decrease in symptoms and signs in the delayed prescription group compared with the immediate prescription group (p values <0.05). Meta-analysis of RCTs was not done because of significant heterogeneity.

#### CONCLUSION

In patients with upper respiratory tract infections, delaying a prescription reduces antibiotic use.

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#### Commentary

Arroll et al should be congratulated on the quality and clinical relevance of this review. They show that delayed antibiotic prescribing can be an effective strategy for reducing antibiotic use in primary care patients with respiratory tract infections in countries where antibiotics cannot be secured from other sources. However, 3 issues deserve further consideration. Firstly, the authors were right not to pool results because delayed antibiotic prescribing is likely to have differential effects across patient age and diagnosis groups. Indeed, in patients with other conditions, such as urinary tract infection, that are associated with a greater clinician and patient expectation from antibiotic treatment, delayed antibiotic prescribing may be less effective. Secondly, the most important outcome (next to development of antimicrobial resistance) is antibiotic consumption, but determining consumption is not straightforward. In open trials and in those where the unit of randomisation is the patient, reporting bias and intervention contamination could have caused patients to overstate an outcome they considered desirable to the investigators. Thirdly, the effect of placing barriers to prescription collection in routine consultations may be regarded by patients as untrusting and paternalistic. In a setting where careful patient centred skills are required to diffuse patient expectations for antibiotics and to reassure them that they are not needed, this may be unacceptable.

So, how should clinicians interpret these results? The delayed antibiotic prescribing strategy should be regarded as complementary to others that can be used during consultations to reduce antibiotic demand and consumption. The first should be to determine whether the patient is expecting antibiotic treatment and why. This may afford an opportunity to set realistic expectations of the natural history of the patient’s (untreated) problem or dispel myths of treatment effectiveness. This in turn can avoid uncomfortable reconsultations where the clinician is accused of under treatment or the ineffectiveness of medication. In those consultations where clinicians and patients are not able to reach agreement, the delayed antibiotic prescribing strategy may be a useful diversion to restore the balance of power between prescriber and patient.

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<table>
<thead>
<tr>
<th>Outcomes</th>
<th>RCT (n)</th>
<th>URTI</th>
<th>DAP</th>
<th>IAP</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumed the antibiotic</td>
<td>A (129)</td>
<td>Common cold</td>
<td>48%</td>
<td>89%</td>
<td>46% (31 to 60)</td>
<td>3 (2 to 4)</td>
</tr>
<tr>
<td></td>
<td>B (315)</td>
<td>Otitis media</td>
<td>24%</td>
<td>98%</td>
<td>75% (68 to 82)</td>
<td>2 (2 to 2)†</td>
</tr>
<tr>
<td>Collected the antibiotic</td>
<td>C (185)</td>
<td>Cough</td>
<td>45%</td>
<td>100%</td>
<td>55% (44 to 64)</td>
<td>2 (2 to 4)</td>
</tr>
<tr>
<td>Used the antibiotic</td>
<td>D (483)</td>
<td>Sore throat</td>
<td>31%</td>
<td>100%</td>
<td>69% (61 to 75)</td>
<td>2 (2 to 2)†</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article.
†The CI looks like a point estimate because of rounding.

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