Use of delayed prescriptions of antibiotics for infants and children - statement

Research and Evaluation team
The aim of this evidence-based statement is to summarise the current knowledge about delayed prescriptions (also called backup prescriptions) for antibiotics and to highlight the special issues that must be taken into account when considering the need for a delayed prescription in infants and children.

Last modified
12 September 2019

Post date
11 January 2019

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This statement is endorsed by the Royal College of General Practitioners.

Background

Delayed prescribing (also known as ‘back up’ prescribing) involves the supply of a prescription, commonly for an antibiotic, to a patient with clear instructions about when to obtain the treatment in relation to their symptoms. It has been used in the context of antibiotic prescribing to reduce consumption of antibiotics for conditions where they are largely unnecessary. This use has predominantly been in general practice and secondarily in emergency departments.

The aim of this evidence based statement is to summarise the current knowledge about delayed antibiotic prescriptions (see full paper on delayed antibiotic prescribing), and to highlight the special issues that must be taken into account when considering the need for a
delayed prescription in infants and children.

**Definition of delayed prescribing**

A delayed prescription is the supply of a prescription to a patient in advance of the possible need for it to be dispensed and taken. Public Health England now advocate the term ‘backup’ prescription as this conveys the place of the prescription more accurately.

Delayed prescription practices may vary and they can be grouped in four main strategies:

1. The patient is advised to re-contact the health professional for a prescription.
2. The patient is provided with a post-dated prescription at the initial consultation.
3. The prescription is filled in and left for the patient to collect if necessary.
4. The patient is given the prescription at the initial consultation (patient led).

**Use of delayed prescriptions**

The use of delayed prescribing is relatively common for respiratory infections and can be a useful mechanism to help manage patient’s expectations.

The following basic elements must be considered with all delayed prescriptions irrespective of the age of the patient:

- The natural history of the presenting infection
- The evidence of benefit of antibiotic treatment for the condition
- The length of time a patient should wait before using the prescription
- Specific signs and symptoms to look out for which would prompt using the prescription
- Specific information about when to re-consult

**Evidence around delayed prescriptions**

The evidence for the use of delayed prescriptions in all age groups largely focuses on respiratory tract infections such as, sore throat, cough and otitis media. Delayed prescribing can be an efficient strategy for use in these infections as it can reduce antibiotic use with minimal effect on patient satisfaction or the clinical outcome. The use of delayed prescribing was endorsed in the NICE guidelines for respiratory tract infection as the most efficient strategy since no prescribing may result in increased re-consultation.

A Cochrane review of delayed prescribing, updated in 2013, showed no difference between delayed, immediate and no prescribed antibiotics for the clinical outcomes evaluated in cough and common cold. In patients with acute otitis media and sore throat immediate antibiotics were more effective than delayed for reducing fever, pain and malaise in some studies. These studies considered the whole population.

A systematic review of the evidence was conducted. The results showed that the efficacy of delayed antibiotics in children has been addressed in 11 published randomised controlled trials that collectively included a population of at least 2,172 children. Seven of them were conducted exclusively on a paediatric population. The objective of the majority of these studies was to evaluate the effectiveness of delayed antibiotics in educating...
antibiotic use. There were also some older studies that were designed as efficacy trials to identify the rate of relapse of group A beta-haemolytic streptococcus between immediate and delayed antibiotic groups.

Delayed antibiotics are shown to be effective in reducing antibiotic use. Family satisfaction has been variable among studies and this may be associated with different strategies of delayed prescribing (ie higher satisfaction rates with family led strategies). Not unexpectedly, immediate antibiotics were associated with increased incidence of antibiotic related side effects, such as diarrhoea. Immediate antibiotics were associated with shorter duration of symptoms, such as fever and malaise. However, the clinical benefit appears to be limited (a reduction of less than one day of symptom duration). No difference was reported in complication rates, although studies were not powered to detect this.

Two studies\textsuperscript{11,13} in otitis media reported subgroup results for children below 2 years of age. Delayed antibiotics were effective in reducing antibiotic use. They were associated with increased rate of treatment failure in this group (reattendance with AOM-related symptoms and positive otoscopic findings within 30 days after initial presentation). This was also associated with antibiotic use within 30 days prior to enrolment\textsuperscript{11}.

Limitations of current evidence

- Only 2 studies\textsuperscript{11,13} contained a subgroup analysis of age, but were underpowered to detect differences in their subgroups. Generally, only 4 studies in otitis media included children younger than 2 years.
- Most of the studies were designed to assess efficacy of delayed antibiotics to reduce antibiotic use. Only 5 studies considered complications in their outcomes, but were not powered to detect differences.
- The studies employed an open, pragmatic design which can lead to high risk of bias.

Potential harms

- There is limited but conflicting evidence that reduced antibiotic prescribing may result in increasing risk of septic complications of respiratory tract infection in a small number of patients\textsuperscript{15,16,17,18} so practitioners need to exercise caution and ensure their safety net advice is clear.
- If infants and young children become more unwell parents may not attend for medical review, but instead use the delayed antibiotic prescription that may now not be appropriate and may undertreat the child.

Safety net advice

The importance of clear advice on the use of a delayed prescription cannot be understated.

Safety netting advice in this context must include:

- What the expected clinical course is
- What to do if clinical course is not followed
- What signs and symptoms to look out for
- When and how to seek further assessment
One useful strategy is to provide educational material in the form of a patient information leaflet such as the [When Should I Worry booklet available online](#).

## Special considerations needed for infants and children

1. When considering the use of a delayed prescription for a child the following additional points must be taken into account: 1. Particular caution should be exercised in dealing with suspected infection in children less than 3 months old (some of whom have not started their primary vaccination course), who have a higher incidence of occult bacteraemia leading to febrile illness. Practitioners should refer to the NICE guideline for febrile Children CG160. **Delayed prescribing in children under 3 months is NEVER appropriate.**

2. Younger patients (less than 2 years) are less able to communicate their symptoms in a meaningful way to their parents or carer. The evidence identified on the overall efficacy and safety of delayed prescribing in this age group is mixed, with no clear idea of the benefits or harms beyond reduced antibiotic usage. **Children under TWO years of age are therefore a particularly vulnerable group, and the use of a delayed prescription for these patients would NOT be considered part of routine practice.**

3. In all children, it is wise to have systems to enable and facilitate further and prompt review. **There should be a low threshold for review whether an antibiotic is prescribed or not.**

4. The safety netting advice, in the form of guidance on when to have concern and seek further assessment, must be tailored to the age of the child, the understanding of the parents and the home circumstances. Existing resources such as the [When Should I Worry booklet](#) contain excellent information for parents about a wide range of conditions to improve safety netting.

for acute lower respiratory tract infection: a randomized controlled trial. JAMA, 293(24), 3029-3035. doi:10.1001/jama.293.24.3029


