

Use of antibiotics for acute sore throat and tonsillitis in primary care

Antibiotics are commonly prescribed for sore throat in primary care, yet are often of limited benefit.¹ They are commonly associated with adverse effects, and contribute towards healthcare costs and antibiotic resistance at both the global and individual level.¹ Prescribing antibiotics also reinforces patients' belief in the need for antibiotics, and increases the chance of re-attendance in the future.²

With a view to helping clinicians optimise antibiotic use, this article summarises evidence concerning the aetiology and natural history of sore throat, incidence of complications, and the use of clinical prediction tools, and compares the outcomes of different antibiotic prescription strategies (no, immediate, and delayed antibiotics), as well as patients' views on these approaches.

ANTIBIOTICS AND THE NATURAL COURSE OF ILLNESS IN SORE THROAT

Around two-thirds of cases are viral (higher in children), and the remainder are usually caused by group A beta-haemolytic streptococci (particularly *Streptococcus pyogenes*), and, less commonly, group C and G streptococci.^{1,3} Sore throat is also a feature in approximately 50% of mild-to-moderate COVID-19 disease.⁴

The latest Cochrane review found that, among patients not prescribed antibiotics, 40% were symptom free by day 3 of illness, and 80% were symptom free by 1 week.¹ This was similar in *Streptococcus*-positive, -negative, and untested participants. On average, antibiotics reduced the duration of symptoms by 16 hours.¹

COMPLICATION RATES

Concern about complications is often a reason for antibiotic prescription, particularly when working in pressured environments (for example, covering urgent care).⁵ Clinicians should be reassured, however, that the incidence of significant complications is very low, regardless of aetiology or antibiotic use.^{1,6}

In the DESCARTE prospective cohort

study⁶ of 13 000 patients in UK primary care, 1.4% of patients developed complications (a similar rate to previous studies).¹ The majority of complications were minor (for example, otitis media and rhinosinusitis), and the incidence of quinsy (peritonsillar abscess) was 0.4%. No cases of post-streptococcal glomerulonephritis or rheumatic fever were recorded. Immediate antibiotics did reduce the incidence of suppurative complications; however, a similar reduction was seen when using delayed antibiotics, and the number needed to treat to prevent one case using immediate antibiotics was almost 200. Similar findings were observed with an individual patient meta-analysis of antibiotic use with respiratory infection.⁷

In the UK, rheumatic fever is extremely rare. This complication is more common among certain endemic regions of the world, and antibiotics may be justified in these settings.

CLINICAL PREDICTION TOOLS

Using clinical prediction scores (for example, FeverPAIN and Centor) to determine the likelihood of streptococcal infection is recommended by the National Institute for Health and Care Excellence (NICE).⁸ The FeverPAIN score was developed to predict the presence of Group A, C, and G streptococci following in vitro evaluation of rapid antigen

CR Wilcox, MBBCh, academic clinical fellow in general practice; **M Moore**, FRCGP, professor of primary care research; **P Little**, MD, professor of primary care research, Primary Care Research Centre, University of Southampton, Southampton, UK.

Address for correspondence

Christopher Wilcox, Primary Care Research Centre, University of Southampton, Aldermoor Health Centre, Aldermoor Close, Southampton, SO16 5ST, UK.

Email: christopher.wilcox@soton.ac.uk

Submitted: 13 October 2021; **Editor's response:** 26 October 2021; **final acceptance:** 15 November 2021.

©British Journal of General Practice 2022; **72:** 136–137.

DOI: <https://doi.org/10.3399/bjgp22X718793>

Box 1. The CHESTSSS mnemonic to aid discussion of antibiotic use with patients

- C** Ask specifically about patient's CONCERNS
- H** Discuss HISTORY and examination
- E** Ask specifically about patient EXPECTATIONS
- S** Provide non-serious explanation for SYMPTOMS
- T** Be specific about TIMELINE/usual course
- S** Explain SHORTCOMINGS of antibiotics
- S** Advise patients how to SELF-CARE
- S** Provide SAFETY-NETTING ADVICE

REFERENCES

1. Spinks A, Glasziou PP, Del Mar CB. Antibiotics for sore throat. *Cochrane Database Syst Rev* 2013; **2013(11)**: CD000023.
2. Little P, Gould C, Williamson I, *et al*. Reattendance and complications in a randomised trial of prescribing strategies for sore throat: the medicalising effect of prescribing antibiotics. *BMJ* 1997; **315(7104)**: 350–352.
3. Lasseter GM, McNulty CAM, Hobbs FDR, *et al*. In vitro evaluation of five rapid antigen detection tests for group A beta-haemolytic streptococcal sore throat infections. *Fam Pract* 2009; **26(6)**: 437–444.
4. Lechien JR, Chiesa-Estomba CM, Placé S, *et al*. Clinical and epidemiological characteristics of 1420 European patients with mild-to-moderate coronavirus disease 2019. *J Intern Med* 2020; **288(3)**: 335–344.
5. Kumar S, Little P, Britten N. Why do general practitioners prescribe antibiotics for sore throat? Grounded theory interview study. *BMJ* 2003; **326(7381)**: 138.
6. Little P, Stuart B, Hobbs FDR, *et al*. Antibiotic prescription strategies for acute sore throat: a prospective observational cohort study. *Lancet Infect Dis* 2014; **14(3)**: 213–219.
7. Stuart B, Hounkpatin H, Becque T, *et al*. Delayed antibiotic prescribing for respiratory tract infections: individual patient data meta-analysis. *BMJ* 2021; **373**: n808.
8. National Institute for Health and Care Excellence. *Sore throat (acute): antimicrobial prescribing*. NG84. 2018. <https://www.nice.org.uk/guidance/ng84> [accessed 31 Jan 2022].
9. Little P, Hobbs FDR, Moore M, *et al*. Clinical score and rapid antigen detection test to guide antibiotic use for sore throats: randomised controlled trial of PRISM (primary care streptococcal management). *BMJ* 2013; **347**: f5806.
10. Spurling GK, Del Mar CB, Dooley L, *et al*. Delayed antibiotic prescriptions for respiratory infections. *Cochrane Database Syst Rev* 2017; **9(9)**: CD004417.
11. Moore M, Stuart B, Hobbs FDR, *et al*. Symptom response to antibiotic prescribing strategies in acute sore throat in adults: the DESCARTE prospective cohort study in UK general practice. *Br J Gen Pract* 2017; DOI: <https://doi.org/10.3399/bjgp17X692321>.
12. Linder JA, Singer DE. Desire for antibiotics and antibiotic prescribing for adults with upper respiratory tract infections. *J Gen Intern Med* 2003; **18(10)**: 795–801.
13. Little P, Stuart B, Francis N, *et al*. Effects of internet-based training on antibiotic prescribing rates for acute respiratory-tract infections: a multinational, cluster, randomised, factorial, controlled trial. *Lancet* 2013; **382(9899)**: 1175–1182.

Competing interests

The authors have declared no competing interests.

Discuss this article

Contribute and read comments about this article: bjgp.org/letters

detection tests (RADT).³ A subsequent randomised controlled trial (in patients aged ≥ 3 years) demonstrated that targeting antibiotics using FeverPAIN reduced both antibiotic use and symptom severity, compared with empirical management.⁹

It should be noted that point-of-care testing (such as RADT) is not recommended by NICE because of a lack of demonstrable benefit over using clinical scores alone in the primary care setting.⁹

ARE PURULENT TONSILS AN IMMEDIATE INDICATION FOR ANTIBIOTICS?

For many clinicians, the presence of pus on the tonsils is considered an immediate indication for antibiotics. It should be noted that purulent tonsils are included as one feature in both FeverPAIN and Centor.⁸ It is therefore recommended that purulence should not dominate decision making, but be considered as part of a structured assessment to determine the likelihood of streptococcal infection.

DELAYED VERSUS IMMEDIATE ANTIBIOTICS FOR SORE THROAT

A delayed (or 'back-up') prescription is a prescription given with the assumption that it will be dispensed after a period of time if the symptoms worsen or do not improve. If antibiotics are considered, NICE recommends delayed antibiotics unless symptoms are very severe, or the patient is vulnerable to complications.⁸

Concerns have been raised regarding the 'real-world' impact of delayed prescribing; however, using delayed prescriptions for respiratory infections has been shown to decrease patients' antibiotic use by >60%, with no significant difference in complication rates.¹⁰ The DESCARTE cohort study⁶ found that delayed antibiotics were actually a little more effective at preventing complications following sore throat than using immediate antibiotics, and significantly reduced re-consultation (39% reduction) compared with immediate antibiotics (17% reduction) and compared with no antibiotics. Furthermore, delayed antibiotics have been shown to confer similar symptomatic benefits to immediate antibiotics, with only a small increase in reported symptoms in some studies.^{10,11}

PATIENT EXPECTATIONS

GPs often overestimate the patient demand for antibiotics, and for many patients the key driver for seeking medical attention is pain relief.¹² Optimising analgesia and offering an explanation of the natural history of sore throat may help patient expectations, and

alter subsequent attendance behaviour.^{2,12} Helpful patient information leaflets to support specific safety-netting advice are available at: <https://elearning.rcgp.org.uk/course/view.php?id=553>.

If antibiotics are prescribed, clinicians should be reassured that delayed prescriptions confer similar symptomatic benefits to an immediate prescription (see above). Recent studies also show no difference in levels of patient satisfaction with both immediate and delayed prescription strategies, and only a small increase with delayed antibiotics compared with no antibiotics.^{7,10}

DELAYED PRESCRIPTIONS IN PRACTICE

Patients are more likely to accept a delayed prescription if they understand the reasons for giving it, and the specific number of days to wait.^{1,2,7,13} A helpful educational resource that offers practical advice regarding the use of delayed prescriptions is available at: <https://antibioticoptimisation.co.uk/using-delayed-prescribing>. A helpful tool when discussing antibiotic use is the CHESTSS mnemonic (Box 1).¹³

SELF-MANAGEMENT STRATEGIES

Paracetamol (first line) and ibuprofen are recommended by NICE for analgesia.⁸ Lozenges and throat sprays containing local anaesthetic and/or non-steroidal anti-inflammatory drugs (NSAIDs), such as benzydamine (Difflam), may also provide some (limited) pain relief.⁸

BOTTOM LINE

The majority of cases of acute sore throat in primary care are viral. Even if bacterial, antibiotics are likely to reduce duration of symptoms by <1 day, and the incidence of complications is very low regardless of aetiology or antibiotic use. Prediction scores can help target antibiotic use. If antibiotics are being considered, a delayed prescription strategy is likely to yield similar benefits in terms of symptom relief and patient satisfaction compared with immediate antibiotics, while lowering re-consultation rates and overall antibiotic use, and not increasing the risk of complications.

Funding

Christopher R Wilcox is an Academic Clinical Fellow in general practice funded by the National Institute for Health Research. No specific funding was obtained for the writing of this article.

Provenance

Freely submitted; externally peer reviewed.