SelfCare
Advancing the study & understanding of self-care

BRIEF COMMUNICATION

SelfCare 2014;**5**(5):110-114

REDUCING ANTIBIOTIC PRESCRIBING FOR SELF-LIMITING RESPIRATORY TRACT INFECTIONS IN PRIMARY CARE: A PILOT STUDY

P. SMITH, K. MCQUATTIE, K. HOGG.

Churchill Medical Centre, Kingston upon Thames, Surrey KT2

ABSTRACT

INTRODUCTION: Churchill Medical Centre, a primary care centre in Surrey, UK, implemented a practice-wide programme aimed at patients and clinicians to reduce ineffective antibiotic prescriptions for common respiratory tract infections.

METHODS: A multidisciplinary team from the practice devised evidence-based key messages based on the National Institute for Health and Care Excellence (NICE) clinical guideline on antibiotic prescribing for self-limiting respiratory tract infections (CG69). The following tools were created to deliver these messages consistently: a) patient information posters displayed in each waiting room and clinical room, b) staff information sheets with evidence-based messages to give to patients and c) patient fact sheets saved on every desktop so that they could be easily printed and handed out.

In addition the practice promoted a policy of 'delayed prescribing' of antibiotics whereby clinicians give patients a prescription for antibiotics, but advise them only to collect it from the pharmacy should their symptoms get worse.

Antibiotic prescribing behaviour for common respiratory tract infections was recorded during the month of October, before the programme was initiated, in order to establish a baseline. The same measurements were repeated in January 2013 during the third month of the programme.

RESULTS: Antibiotic prescribing for coughs was reduced from 54.5% of patients in October, to 37.7% in January. Antibiotic prescribing for upper respiratory tract infections was reduced from 32.6% in October to 19.7% in January.

CONCLUSIONS: This pilot programme suggests that consistent delivery of evidence-based information on the self-care of self-limiting respiratory tract infections and the limited role that antibiotics play in their treatment, can reduce unnecessary antibiotic prescribing. Patients can be given information about the natural history of these common conditions and empowered to practice self-care for symptoms. Further studies might elucidate which elements in the programme are most effective in producing this outcome in primary care.

Key words: Antibiotic prescribing, upper respiratory tract infections, cough, colds, patient education, NICE guidance.

INTRODUCTION

Self-limiting respiratory tract infections include: acute otitis media, acute sore throat/acute pharyngitis/acute tonsillitis, the common cold, acute rhinosinusitis and acute cough/acute bronchitis. Meta-analyses of clinical studies show that antibiotics are not effective at treating common respiratory tract infections and in around 25% of patients they can cause harmful side effects[1,2,3,4]. Despite this, prescribing rates in primary care remain high, with General Practitioners (GPs) sometimes feeling pressured to prescribe ineffective medicines. An audit in the Churchill Medical Centre showed that clinicians were prescribing antibiotics for an average of 40% of patients presenting with upper respiratory tract infection symptoms.

The current National Institute for Health and Care Excellence (NICE) clinical guideline on antibiotic prescribing for self-limiting respiratory tract infections recommends a 'no antibiotic' prescribing strategy or a 'delayed antibiotic' prescribing strategy in most such patients[5]. Regardless of the prescribing strategy implemented, the guideline recommends that patients are given advice about the usual natural history of the illness, including the average total length of the illness for each of the presenting symptoms as well as advice about managing symptoms, including fever (particularly the use of analgesics and antipyretics). They should also be offered reassurance that antibiotics are not needed immediately because they are likely to make little difference to symptoms and may have side effects, for example, diarrhoea, vomiting and rash. We decided to implement this guidance as fully as possible in our practice by creating a series of tools to communicate consistent advice on the subject to patients.

METHODS

A multidisciplinary team of 'champions' from across the practice was set up to devise key messages based on the NICE clinical guideline on antibiotic prescribing for self-limiting respiratory tract infections (CG69)[5]. They created a patient information poster (see Supplementary Data) which was displayed in each waiting room and clinical room. The poster highlighted that most of these common illnesses do not require antibiotics, and that treating symptoms at home with painkillers is the best course of action.

All staff members, including receptionists, were fully briefed on the key messages in the run up to the project being launched. Clinicians were urged to speak to patients in a positive manner, acknowledging their efforts at home treatment and re-emphasising the key messages.

Materials were also produced to support GPs to stop or delay antibiotic prescribing. GPs and other clinicians were given an A4 sheet of 'cast-iron' evidence-based messages to give confidently to patients, including:

- The normal duration of common colds, coughs and similar conditions.
- Strong evidence on the inefficacy of antibiotics to treat these conditions.
- How to treat symptoms at home, e.g. by the use of painkillers.
- When to call for help.

The staff information sheet also included the NICE flow chart summary of upper respiratory tract infection management on the reverse[5]. Patient fact sheets were saved on every desktop so they could be easily printed out and handed to patients. An example 'Fact Sheet' on Ear Infection can be downloaded with this paper (see Supplementary Data).

In addition 'delayed prescribing' was promoted as an option for clinicians to use. This evidence-based strategy, as recommended in the NICE guidance, involves giving patients a prescription for antibiotics, but advising them only to collect it from the pharmacy should their symptoms get worse or fail to settle in accordance with the expected course of the illness. In our practice we have found previously that delayed prescribing can be a useful tool for GPs if confronted with a particularly sceptical patient who is not happy to leave the surgery without a prescription. In the majority of cases, the infection will get better spontaneously, and in our experience around 70% of these prescriptions are never dispensed.

RESULTS

Prior to launching the programme in November 2012, the team measured prescribing behaviour during the month of October in order to establish a baseline. The same measurements were taken in January 2013 after the programme had been running for two months, to assess progress. The following outcomes were observed:

- Antibiotic prescribing for coughs was reduced from 54.5% of patients in October 2012, to 37.7% in January 2013.
- Antibiotic prescribing for upper respiratory tract infections was reduced from 32.6% in October 2012 to 19.7% in January 2013.
- In January 2013 alone, we recorded 67 patients in whom unnecessary prescription of antibiotics were avoided.

The antibiotic prescriptions recorded include delayed prescriptions and the proportion of these that led to antibiotics being dispensed is unknown.

DISCUSSION

Antibiotic resistant organisms pose one of the greatest risks to human health globally and sensible antibiotic stewardship is an important part of addressing this problem[6]. International comparisons make it clear that antibiotic resistance rates are strongly related to antibiotic use in the community[7,8].

Most common respiratory tract infections resolve without complications but most people presenting in primary care with an acute uncomplicated RTI will still receive an antibiotic prescription. Patients understandably attribute their symptom resolution to antibiotics, and thus a cycle of 'medicalising' self-limiting illness is created[5]. The consequences for primary care are profound:

- If patients believe that they need antibiotics then they will attend the practice to obtain them and this can challenge resources during the peak season for such infections.

- Challenging patients' beliefs about antibiotic efficacy once they have presented can be time consuming and stressful and prescribers may be tempted to take the easy option and prescribe.

We have shown that a concerted practice-wide educational campaign with consistent evidence-based messages, together with encouragement for delayed prescribing, can substantially reduce antibiotic prescribing. We estimate that if these results are sustained over the course of a year this could equate to over 700 fewer antibiotic prescriptions being issued by Churchill Medical Centre. Additionally the prescriptions issued once the campaign was underway include delayed prescriptions. We are not able to determine what proportion of these led to antibiotics being dispensed, but previous experience indicates that only a minority may lead to antibiotics being collected and used. Thus the impact of this campaign on antibiotic consumption may be greater than is apparent from the impact on numbers of prescriptions alone.

In our view the success of the programme depended on the buy-in of staff from across the practice and this required persistent reinforcing of the message to our clinicians. It was also important to involve reception staff from the early stages as they play a key role, including the first contact with patients on the telephone.

We recognise that this study has significant limitations. Our comparison with historic prescribing practices is open to substantial bias since we lacked a control group of any kind. It might be possible to examine the impact of an educational programme such as this by randomising matched practices to implement the new intervention or to continue the previous standard of care (i.e. a cluster randomisation study) however we lacked the resources to undertake such an exercise. We also accept that we showed progress over a relatively short period of time and that we do not know how well improvements might be sustained over the longer term. However early indications are that the improvement has been sustained by regular reiteration of the messages. Furthermore, the nature of our intervention is primarily educational and it is possible that over time better understanding of the natural history of uncomplicated RTI will enable future self management and reduce demand at the practice. Finally we are unable to say which elements of the campaign were most important in producing the outcome. The educational tools were employed at the same time as an emphasis on delayed prescribing as a preferred option for RTIs, and it is therefore uncertain whether either element alone would have achieved similar results. Nevertheless, empirically this combination of interventions would be expected to be synergistic and therefore we decided to implement all of the NICE recommendations, which are evidence-based, simultaneously.

Staff in primary care can play an important role in antibiotic stewardship. Our pilot study shows that providing evidence-based information to patients and consistent re-enforcement of key messages by all staff, together with a policy of issuing delayed prescriptions, can reduce the number of antibiotic prescriptions issued. Longer term benefits of empowering people to self-manage symptoms of common infections might include reduced consultations and therefore demand for antibiotics. Our pragmatic study shows that dedicated implementation of evidence-based guidance can produce important benefits in primary care. Further studies might build on this to determine the most efficient combination of policy initiatives at the practice level. Meanwhile, the whole programme

was designed to be easily reproducible in other practices and all the materials are freely available from the authors and can be downloaded from the Self Care Forum website[9].

Correspondence to: Dr P Smith, email: petesmith5002000@yahoo.co.uk.

Statement of Interests: The authors have no conflict of interest relating to the conduct of the study or publication of this paper.

Funding: The authors received no funding relating to the conduct of this study.

Supplementary Data: This can be accessed and downloaded from http://www.selfcarejournal.com/view.article.php?id=10155

REFERENCES

1. Kenealy T, Arroll B. Antibiotics for the common cold and acute purulent rhinitis. Cochrane Database Syst Rev. 2013 Jun 4;6:CD000247.
2. Lemiengre MB, van Driel ML, Merenstein D, Young J, De Sutter AI. Antibiotics for clinically diagnosed acute rhinosinusitis in adults. Cochrane Database Syst Rev. 2012 Oct 17;10:CD006089.
3. Smith SM, Fahey T, Smucny J, Becker LA. Antibiotics for acute bronchitis. Cochrane Database Syst Rev. 2014 Mar 1;3:CD000245.
4. Venekamp RP, Sanders S, Glasziou PP, Del Mar CB, Rovers MM. Antibiotics for acute otitis media in children. Cochrane Database Syst Rev. 2013 Jan 31;1:CD000219.
5. National Institute for Health and Care Excellence: Respiratory tract infections – antibiotic prescribing: Prescribing of antibiotics for self-limiting respiratory tract infections in adults and children in primary care (Clinical Guideline 69) http://www.nice.org.uk/guidance/cg69 Accessed October 2014
6. Spellberg B, Bartlett JG, Gilbert DN. The future of antibiotics and resistance. N Engl J Med. 2013 Jan 24;368(4):299-302.
7. Miyakis S, Pefanis A, Tsakris A. The challenges of antimicrobial drug resistance in Greece. Clin Infect Dis 2011;53:177.
8. Sabuncu E, David J, Bernede-Bauduin C, Pépin S, Leroy M, Boëlle PY, Watier L, Guillemot D. Significant reduction of antibiotic use in the community after a nationwide campaign in France, 2002–07. PLoS Med 2009;6:e1000084.
9. Self Care Forum: Case studies : 'Home Care is Best' http://www.selfcareforum.org/resources/case-studies/ Accessed October 2014