

Title

Antibiotic treatment of acute infectious cough in otherwise healthy adults as per HSE guidelines

Introduction

Antibiotic resistance is one of the biggest threats to global health today. Antibiotic resistance can occur naturally, however, ill prescribing is accelerating the problem. Antibiotic resistance leads to longer hospital stays, higher medical costs and rising mortality. Common infections and minor injury are becoming increasingly more difficult to treat as our antibiotics are becoming more and more ineffective. While work across the globe is being done to develop new antimicrobial medication, antibiotic resistance will remain an issue unless there is a collaborative change in antibiotic use. All health care professionals have a responsibility to follow guidelines regarding the need for antibiotics and to prescribe the correct agent and dose. Furthermore, it is important that patients are informed on how to reduce the risk of infection, for example, being vaccinated, hand washing, safe food hygiene practises and safe sex. Health care providers should discuss how to take antibiotics correctly and explain the dangers of misuse and the importance of preventing antibiotic resistance.¹

Considering the importance of correct antibiotic prescribing, in our primary care facility, <<NAME OF FACILITY WITHELD>>, we decided to conduct an audit to investigate the practises' prescribing and if the correct antibiotic and correct dose was given for an acute infectious cough in an otherwise healthy adult. These results were compared to the HSE guidelines for the treatment of infectious cough.

It is imperative that we prevent antimicrobial resistance and endeavour to keep antibiotics effective for future generations.¹

Methods

The aim of this audit was to improve standard of care by achieving optimal prescribing. We hoped to reduce the number of antibiotics prescribed that are not recommended in the HSE guidelines and thus provide an up-to-date, optimal standard of care. Prescribing the recommended antibiotic(s) at the correct dose and for the correct duration is important in primary care to reduce antibiotic resistance in patients and to improve the patient's symptoms and outcomes of infection.

We intended to achieve this by improving antibiotic prescribing. We chose to follow the antibiotic prescribing HSE guidelines. Our standard, or desired level of performance, was a 50 % improvement in accordance with the HSE guidelines. Patient circumstance will necessitate the use of antimicrobials outside the guidelines and this was taken into consideration when discussing our standard.

The inclusion criteria for the audit were adult patients (aged 18 to 99 years) who presented with a clinically diagnosed acute infectious cough, who were otherwise healthy and who did not have a respiratory condition such as asthma, COPD or lung cancer, or who did not have significant medical comorbidities. Furthermore, in accordance with HSE guidelines, those not requiring an antibiotic were excluded from the data collection. Data was examined by clinical staff and entered anonymously into a spreadsheet which was analysed using Microsoft Excel.

Following an audit of this population, the change implemented was commenced with a practise education meeting. The meeting detailed the HSE guidelines for antibiotic prescribing in this cohort and the importance of optimal prescribing. HSE guidelines for the antibiotic treatment of acute cough are as follows; Amoxicillin 500 mg TDS for 5 days or doxycycline 200 mg stat/100 mg OD for 5 days.² Secondly, on the practise's software, standard scripts for antibiotics were changed to match the HSE guidelines.

Following this intervention in November 2018, the electronic health records of adults presenting with an acute infectious cough in January 2019 with the above inclusion criteria were analysed and recorded, following the methodology outlined above and the results were compared.

Results

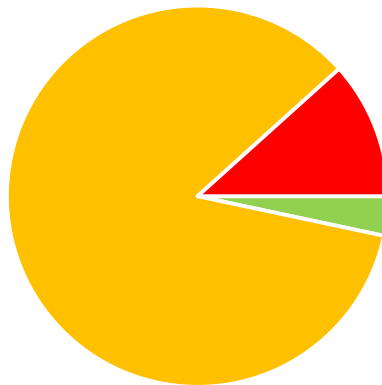
In January 2018, only 2 % of patients were treated in accordance with guidelines for acute infectious cough. In January 2019, 72 % of patients were treated in accordance with guidelines i.e. 70 % improvement.

Table 1

	Jan-18		Jan-19	
	N=60		N=76	
Antibiotic	Cases	%	Cases	%
Amoxicillin 500mg TDS x 5/7	1	2	54	71
Amoxicillin 500mg TDS x 6/7	37	62	5	8
Amoxicillin 500mg TDS x 7/7	4	6	1	1
Clarithromycin 500mg BD x 7/7	1	2	8	11
Clarithromycin LA 500mg OD x 7/7	10	17	1	1
Doxycycline 200mg stat then 100mg OD for 5 days	0	0	1	1
Erythromycin 250m TDS x 5/7	1	2	0	0
Cefaclor 375mg BD x 6/7	1	2	0	0
Augmentin 625mg TDS x 7/7	3	5	6	8
Levofloxacin 500mg BD x 5/7	1	2	0	0

Results diagrammatically presented for January 2018

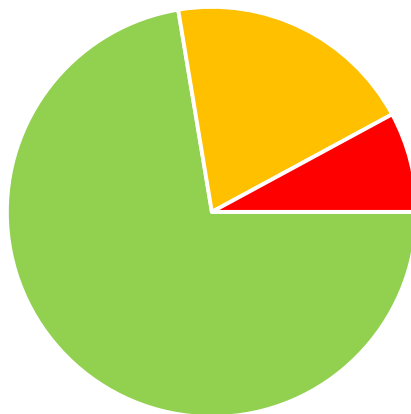
January 2018
n=60



- Appropriate antibiotic and dose
- Appropriate antibiotic, inappropriate dose/duration
- Antibiotic outside guidelines

Results diagrammatically presented for January 2019

January 2019
n=76



- Appropriate antibiotic and dose
- Appropriate antibiotic, inappropriate dose/duration
- Antibiotic outside guidelines

Conclusion

The results of the re-audit were positive and encouraging. In January 2018 2 % of patients were treated with the appropriate antibiotic and dose as per the HSE guidelines for acute infectious cough. In January 2019, 70 % of patients who presented with an acute infectious cough were treated with the appropriate antibiotic and dose. The small change implemented saw a 68 % increase in correct prescribing. In the future, we wish to continue improving our standard of care. To do this, we intend to audit antibiotic prescribing in other respiratory conditions such as community acquired pneumonia and infective exacerbation of COPD. This local audit to improve antibiotic prescribing and standards contributes to the larger global initiative set out by the World Health Organization, the “Global action plan on antimicrobial resistance”, to tackle the threat of antimicrobial resistance.¹

References

¹ Who.int. (2018). *Antibiotic resistance*. [online] Available at: <https://www.who.int/news-room/fact-sheets/detail/antibiotic-resistance> [Accessed 3 Mar. 2019].

² HSE.ie. (2019). *Acute Cough, Bronchitis - HSE.ie*. [online] Available at: <https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/conditions-and-treatments/lower-respiratory/acute-cough-bronchitis/acute-cough-bronchitis.html> [Accessed 3 Mar. 2019].