

# Prescribing...

- ✚ There is emerging evidence that shorter courses of antibiotics result in less resistance than longer courses.
- ✚ A UK study has reported that considerable reduction in antibiotic use in primary care could be achieved by aligning treatment duration with guidelines.

A UK study that evaluated antibiotic prescriptions following 931,015 consultations for common infections in primary care has found that a large proportion had durations that exceeded recommendations in Public Health England (PHE) guidance during the study period. The authors calculated that if all included patients had received treatment for the recommended durations, it would equate to 1.3 million fewer days of antibiotic use. The findings suggest that considerable reductions in antibiotic use could be achieved in primary care by aligning treatment duration with guidelines. No local data are available linking diagnosis with prescribing data, but this study is a useful reminder of the importance of prescribing for the correct duration.

## What do we know already ?

- Antibiotic resistance is a growing public health concern. The relationship between antibiotic exposure and the development of resistance is well-established and reducing excessive and inappropriate antibiotic use is therefore a major area of focus in the Bailiwick, in UK and many other countries.
- Historically, healthcare professionals were advised that antibiotic courses should be long enough to prevent development of antibiotic resistance in the infection that was being treated. However, there is increasing evidence that the longer the exposure to antibiotics the greater the development of resistance in commensal bacteria, which then leads to a greater risk of resistance in subsequent infections.
- Local clinical guidelines have recently been published to support appropriate antibiotic prescribing and offer advice on the management of many common infections including acute cough, urinary tract infections, otitis media, sore throat, acute sinusitis, acute pyelonephritis, and exacerbations of chronic obstructive pulmonary disease (COPD).

Studies that have assessed antibiotic overuse in primary care have focused primarily on the initial prescribing decision (whether antibiotics are indicated and choice of agent). So evidence on whether duration of treatment is in line with guidelines is lacking.

## What was the study ?

This cross-sectional study used data from the Health Improvement Network (THIN) database to evaluate antibiotic prescriptions for 13 common infections. Over two-thirds of included prescriptions were for respiratory infections (including otitis media), and over 80% had durations that were longer than recommended in PHE guidance. While fewer prescriptions for non-respiratory tract infections exceeded recommended durations, 54.6% of antibiotic courses for acute cystitis in women were for longer than the recommended three days. Results were similar in patients with and without comorbidities.

The study used data from general practices contributing to THIN between 2013 and 2015. The THIN database contains anonymised data on patients, practices and consultations, and is considered representative of the general population in the UK. The authors identified consultations that resulted in an antibiotic prescription for one of the following indications: acute sinusitis, acute sore throat, acute cough and bronchitis, pneumonia, acute exacerbation of chronic obstructive pulmonary disease (COPD), acute otitis media, acute cystitis, acute prostatitis, pyelonephritis, cellulitis, impetigo, scarlet fever, and gastroenteritis. Antibiotic prescriptions for

chronic and recurrent conditions as well as repeat prescriptions were excluded. The durations of antibiotic courses prescribed for the included indications were compared with recommendations in the guidance provided by PHE in 2013.

### What were the outcomes and the results ?

A total of 931,015 consultations for the included indications resulted in an antibiotic prescription. About 1.3 million days were beyond the durations recommended by PHE in 2013.

- The most common indications for antibiotics were acute cough and bronchitis (41.6% of the included consultations) acute sore throat (25.7%), acute otitis media (8.9%), acute sinusitis (8.2%), cellulitis (5.9%), and acute cystitis (5.7%).
- More than two thirds of the prescriptions included in the analysis were for upper respiratory tract infections and acute cough and bronchitis, and over 80% had durations that exceeded those recommended in PHE guidance. Exceptions were acute sinusitis and acute sore throat for which only 9.6% (95% confidence interval [CI] 9.4% to 9.9%) and 2.1% (95% CI 2.0% to 2.1%) of prescriptions were for longer than recommended.
- Although fewer prescriptions for non-respiratory tract conditions exceeded recommended durations, more than half (54.6%, 95% CI 54.1% to 55.0%) of antibiotic prescriptions for acute cystitis among women were for longer than recommended.
- Similar results were obtained when restricting the analysis to patients without relevant comorbidities. After excluding people with comorbidities and previous use of immunosuppressant drugs or inhaled or systemic corticosteroids, the percentage of prescriptions that were longer than recommended differed by 2% or less, with estimates based on all patients.
- When restricting the analysis to antibiotic prescriptions beyond recommended durations, the median number of days beyond the guideline recommendations was two for acute cough and bronchitis, two for acute otitis media and three for acute sinusitis. For acute cystitis, antibiotics were over-prescribed by four days in women and seven days for men.
- Younger people with acute cough and bronchitis, acute otitis media, impetigo, pyelonephritis, and gastroenteritis were more likely than older people to receive prescriptions for antibiotic courses that were longer than recommended.
- For two of the studied indications, treatment was frequently prescribed for shorter than recommended durations: acute cystitis in men (31.8%) and acute prostatitis (52.3%). The authors suggest that this may be because prescribers appreciate that recommendations for these conditions are based on expert opinion and historical precedent rather than evidence.

### So what ?

- This was a UK study on "real" patients in a UK primary care setting, so it's results are highly likely to be relevant and applicable to primary care practice in the Bailiwick.
- Ensuring that courses of antibiotics are not longer than those recommended may result in reduced antibiotic resistance in our community.
- The UK study found that prescriptions for respiratory infections and UTIs in women were most likely to be prescribed for longer than recommended.

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