

# Do we prescribe therapeutic antibiotics correctly?

*A study of therapeutic antibiotic prescribing in National Health Service general dental practice in England*

by N. A. O. Palmer, R. Pealing, R. S. Ireland, and M. V. Martin *Br Dent J 2000; 188: 554-558*

## Objective

To study the therapeutic prescribing of antibiotics by general dental practitioners.

## Design

A postal questionnaire of National Health Service general dental practitioners in ten English Health Authorities.

## Subjects

General dental practitioners (1,544) contracted to provide NHS treatment in the Health Authorities of Liverpool, Wirral, Oxfordshire, Buckinghamshire, Nottingham, North Nottinghamshire, Sheffield, Newcastle, Northumberland and North Tyneside.

## Main outcome measures

The questionnaires were analysed and the responses to each question expressed as absolute frequencies.

## Results

Responses to the questionnaire were received from 929 (60.1%) practitioners. More than 95% of practitioners recognised the need for prescribing antibiotics where there was evidence of spreading infection. Some practitioners (12.5%) prescribed antibiotics for acute pulpitis and (3.3%) for chronic marginal gingivitis. Antibiotics were prescribed by practitioners before drainage of acute abscesses (69%) and by 23% after drainage. Practitioners were generally not influenced by patient's expectations of receiving antibiotics (92%), but would prescribe

when under pressure of time (30.3%), if they were unable to make a definitive diagnosis (47.3%), or if treatment had to be delayed (72.5%). Amoxicillin was the most frequently prescribed antibiotic used for most clinical conditions apart from pericoronitis, acute ulcerative gingivitis and dry sockets where metronidazole was the drug of choice. There was a wide variety of dosage, frequency and duration for all the antibiotics used in the treatment of acute dental infections.

## Conclusions

The results obtained from this questionnaire support the conclusion that the therapeutic prescribing of antibiotics in general dental practice varies widely and is suboptimal. There is a clear need for the development of prescribing guidelines and educational initiatives to encourage the rational and appropriate use of the antibiotics in National Health Service general dental practice.

## In Brief

- Therapeutic prescribing in general dental practice is suboptimal.
- Some practitioners prescribed for conditions such as gingivitis and pulpitis where antibiotics were not indicated.
- There is a clear need for antibiotic prescribing standards for general dental practitioners.

## Comment

The management of infection is a large element of the work of dental practitioners. Antimicrobial drugs are, therefore, potentially very valuable in dentistry. However, the alarming increase in antibiotic resistance among pathogenic organisms isolated in medical, dental and veterinary settings places an obligation on all prescribers to use these drugs judiciously. In the light of the document *'The Path of Least Resistance'*, recently published by the Department of Health, baseline studies of the type described in this paper by Nick Palmer and colleagues are essential if we are to identify ways to optimise antibiotic prescribing in dentistry.

The study was based around a questionnaire sent to 1,544 general dental practitioners providing NHS treatment in ten English health authorities. Among the 60% of responding practitioners, many showed a good knowledge of the indications for antibiotics in management of acute dental infections. However, the data also suggested

a significant level of inappropriate prescribing. This was evident both in terms of the clinical indications, for example prescribing for acute pulpitis or chronic marginal gingivitis, and in the wide range of regimes employed. Many of the courses used incorrect dosages and were excessively long. It was of interest that most of the practitioners were not influenced by patient expectation, since in medicine this has been identified as a major pressure on doctors to prescribe antibiotics for problems such as sore throats, and has spawned a media campaign to educate the public.

Particular areas of concern include the apparently widespread use of antibiotics when a diagnosis cannot be established and the use of antibiotics by almost a third of practitioners if they were short of time. These practices clearly result in misdirected prescribing and run counter to Department of Health guidance on the use of antimicrobial agents.

This excellent study has highlighted that improved antimicrobial prescribing patterns are required in dentistry, just as they are needed in medicine. The problem can be tackled on many fronts, including improved education and the provision of sound, evidence-based prescribing guidelines. Research activity is also essential to monitor resistance patterns and to examine, by means of well designed randomised controlled clinical trials, the most appropriate prescribing regime for specific clinical problems. It is to be hoped that the results of this important study will encourage all dental practitioners to think carefully as they reach for the prescription pad, not only about what to prescribe and for how long, but whether to prescribe at all.

## Jeremy Bagg

Professor of Clinical Microbiology, University of Glasgow Dental School