

Antibiotic stewardship

Dr Alexander Crighton

Consultant in Oral Medicine, Glasgow
Scottish Antimicrobial Prescribing Group
DoH Advisory Committee on Antibiotic Resistance
and Healthcare Acquired Infections

Send your comments to the
Editor-in-Chief,
British Dental Journal,
64 Wimpole Street,
London
W1G 8YS
Email bdj@bda.org

EDITORIAL

Each year there is a European Antibiotic Awareness Day (EAAD) which is a Europe-wide publicity day to highlight important issues with antibiotics both within the European Union and in the rest of the world. The Day (18 November 2011) aims to engage with patients and health professionals to increase their knowledge about antibiotics including current issues with infections and antibiotic resistance and 'horizon scanning' likely problems ahead. Key in this is the proper use of antibiotics in the management of actual or perceived infections and the consequent development of resistant strains of organisms that previously were considered routine to manage. Public awareness of antibiotic problems usually concern a 'superbug' such as MRSA or antibiotic associated diarrhoea caused by *Clostridium difficile*. Both can be challenging to treat as the number of multiple drug resistant strains increase and the arsenal of available antibiotics diminishes. The rise in these and other resistant strains of microorganisms has mirrored the increasing use of antibiotics groups including the cephalosporins, fluoroquinolones such as ciprofloxacin, macrolides and the penicillinase resistant drug, co-amoxiclav.

It is important that all healthcare professionals are aware of the concerns within the expert community about the rise in drug resistance, particularly as the rate at which this is increasing is outstripping the development of 'new' antibiotic groups. As such there is a real danger that untreatable infections may again become a regular feature of medical care as they were in the early years of the last century. EAAD hopes to make this clear to the public and professionals to help them make sensible choices in managing actual or potential infections, avoiding antibiotic use completely where this is safe and sensible. When antibiotics are needed, EAAD aims to encourage prescribing that is both timely and appropriate and using drugs that are least likely to increase current or future drug resistance. This 'Antibiotic Stewardship' must apply to all prescribers no matter how remote they may appear from the 'superbug' war.

DENTISTS RARELY SEND PUS SAMPLES

What role is there for the dental profession in this quest? Dental prescribing is a very small part of antibiotic use in the UK, however small does not mean unimportant. When dentists prescribe they are more likely to be prescribing an antibiotic than primary care doctors, and so the proportion of dental prescribing which could be an influence to developing bacterial resistance is higher. The more frequently these drugs are prescribed the quicker resistant strains of bacteria will develop and more

weapons in the armory against infection will be lost. In particular dental use of co-amoxiclav, clindamycin, clarithromycin, cephalosporins and azithromycin is to be strongly discouraged unless advised by a specialist. Their dental use should preferably follow culture and sensitivity testing, demonstrating the need for these valuable medicines rather than the more commonly used antibiotics such as amoxicillin or metronidazole.

Dentists rarely send pus samples for culture and this is a situation which should change. Samples can easily be aspirated into a sterile syringe and can remain viable for up to 72 hours to allow transportation to the local microbiology laboratory. Aspirates are preferred to swabs as they reduce the chance of contamination of the sample with the normal oral flora. Routinely sending a sample will help with patient management where there seems little response to 'best guess' antibiotic treatment after a suitable period of drug use. There is even a fee for submitting a pathological specimen. Proper sensitivity reporting will improve the care for the individual patient but also help inform the dentist and at a wider level, the epidemiologist as to the true nature of microorganisms responsible for the common infections seen in primary dental care. Antibiotic sensitivity to oral infections can be monitored longitudinally and any need to change dental prescribing policy can be evidence based, region by region.

Proper antibiotic stewardship by the dentist should include never using an antibiotic 'just in case' or where inflammatory disease such as pulpitis will not benefit from a systemic antibiotic. Failure to respond to one antibiotic is not in itself a good reason to use a second line antibiotic when operative surgery, a higher dose of a standard antibiotic or both might suffice. Culture and sensitivity testing will make this clear. Dental infections are usually localised and should first be managed by surgical means, with antibiotics best being used as occasional supportive therapy rather than as holding or definitive care.

Dentists have so far escaped the monitoring of antibiotic use that is normal in hospital and medical primary care, but we must still adhere to best prescribing practice, not because we have to, but because we can. For the dentist the message of EAAD is simple and clear; reduce your use of antibiotics, target them by culture and sensitivity testing and avoid use of essential 'superbug' antibiotics. Most importantly, use surgery where surgery is indicated. The EAAD is supported in the UK by the Department of Health and the health departments of the devolved administrations in Wales, Scotland and Northern Ireland (<http://ecdc.europa.eu/en/eaad/antibiotics/Pages/antibiotics.aspx>).

DOI: 10.1038/sj.bdj.2011.967