Summary of: Antibiotic prophylaxis in oral healthcare – the agreement between Swedish recommendations and evidence

E. Ellervall,¹ E. Vinge,² M. Rohlin³ and K. Knutsson⁴

FULL PAPER DETAILS

¹Faculty of Odontology, Malmö University, Malmö, Sweden; ²Associate Professor, Department of Clinical Pharmacology, Lund University Hospital, Lund, Sweden; ³Professor, ⁴Associate Professor, Faculty of Odontology, Malmö University, Malmö, Sweden

*Correspondence to: Eva Ellervall
Email: eva.ellervall@mah.se

Online article number E5

Refereed Paper – Accepted 24 August 2009

DOI: 10.1038/sj.bdj.2010.107

©British Dental Journal 2010; 208: E5

Background Almost all (17/20) Swedish counties have pharmaceutical committees that establish recommendations for the use of antibiotic prophylaxis in oral healthcare. **Objective** To evaluate the evidence for the use of antibiotic prophylaxis in oral healthcare and the agreement between Swedish recommendations and evidence. **Material and methods** We conducted a systematic literature search in PubMed and the Cochrane Controlled Trials Register. The MeSH terms 'antibiotic prophylaxis' and 'dentistry' were used in the database search. Abstracts were reviewed according to specific inclusion and exclusion criteria. A total of 186 articles were read in full text by the four authors independently. Data extraction and interpretation of data was carried out using a pre-defined protocol. In the end, one case-control study was included for evaluation of evidence. **Results** The case-control study included patients with specific cardiac conditions. The study reported a 49% protective efficacy (odds ratio: 0.51) of antibiotic prophylaxis for first-time episodes of endocarditis within 30 days of procedure. This result was not statistically significant. The quality of the evidence was low. No studies were evaluated on patients with other medical conditions. The recommendations included several cardiac and other medical conditions for which there is a lack of evidence or no evidence to support the use of antibiotic prophylaxis. **Conclusions** There is a lack of evidence to support the use of antibiotic prophylaxis. To avoid the risk of adverse events from antibiotics and the risk of developing resistant bacterial strains, the use of antibiotic prophylaxis should be minimised and recommendations in Sweden should be revised to be more evidence-based.

EDITOR'S SUMMARY

The immediacy of the Internet means that, amongst many other things, national policies on a variety of measures are instantly accessible and available for scrutiny by people in other countries.

In this instance it is the UK's NICE guidance on antibiotic prophylaxis in relation to infective endocarditis and dental treatment and how NICE no longer deems the hitherto apparently preventive measure necessary. The document and the evidence on which it is based has been scrutinised by those with an interest in the matter in Sweden, which lead them to research how the authorities in their country advise their dentists. The situation in Sweden is complicated by the fact that each of the 20 counties has its own pharmaceutical committee with potentially different

and possibly conflicting dictates. So, if we in the UK thought that we had been in an invidious position until now, being as our expert commentator describes it 'piggy in the middle' between microbiologists and cardiologists, perhaps we should spare some sympathy for our Scandinavian colleagues.

Spurred on by the UK example, the researchers are now attempting to get some consensus among the 20 counties in relation to their prescriptions and, furthermore, to get that consensus to be evidence-based and in line with the NICE recommendations.

A result in this case would be a positive victory for international collaboration, albeit by example as much as by direct co-operation, but the very existence of diverse advice on such a subject underlies both the value of bodies communicating across national boundaries

and the robustness that good science can bring to subjects that otherwise defy logic in different jurisdictions.

Doubtless the debates, arguments and disagreements will continue on this topic for some time to come but the greater the gathering international consensus the greater will be the convergence of practice and universal understanding.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 208 issue 4.

Stephen Hancocks,
Editor-in-Chief

DOI: 10.1038/sj.bdj.2010.131

TO ACCESS THE BDJ WEBSITE TO READ THE FULL PAPER:

- BDA Members should go to www.bda.org.
- Click the 'login' button on the right-hand side and enter your BDA login details.
- Once you have logged in click the 'BDJ' tab to transfer to the BDJ website with full access.

IF YOUR LOGIN DETAILS DO NOT WORK:

- Get a password reminder: go to www.bda.org, click the login button on the right-hand side and then click the forgotten password link.
- Use a recommended browser: we recommend Microsoft Internet Explorer or Mozilla Firefox.
- Ensure that the security settings on your browser are set to recommended levels.

IF YOU HAVE NOT YET SIGNED UP TO USE THE BDA WEBSITE:

- Go to www.bda.org/getstarted for information on how to start using the BDA website.

IN BRIEF

- According to evidence, there are few medical conditions for which antibiotic prophylaxis should be used.
- Recommendations in Sweden include many different medical conditions for which antibiotic prophylaxis should be used.
- To avoid the risk of adverse events and of developing resistant bacterial strains, recommendations in Sweden should be more evidence-based.

COMMENT

Arguments about the efficacy of antimicrobial prophylaxis for preventing infective endocarditis have been omnipresent for years. It has been thought that antimicrobials given before certain types of dental treatment could prevent infective endocarditis. Preventative treatment was established with arguments about when the prophylaxis should be given, to whom, which antimicrobial and at what dose. The concept in the UK of a prophylactic 3 g of amoxicillin was born; a huge dose that I once described as like 'shooting down a pigeon with an interballistic missile'. Three distinct opinion groups were formed. The first group were microbiologists, who could not see how the prophylaxis worked on transient bacteraemias. The second group were the cardiologists, who knowing the devastating effects of infective endocarditis felt that prophylaxis had to be given. The third group were the dental profession who were 'piggy in the middle' and often confused by both microbiologists and cardiologists. The problem for dentists in the UK has been almost solved by NICE who have recommended, on an evidence-base, that no antimicrobial prophylaxis is given for any dental patient to prevent infective endocarditis.

Sweden is not so fortunate as 17/20 counties have pharmaceutical committees that recommend different antibiotic regimes. The authors of this paper have looked again at the available evidence for the efficacy of antimicrobial prophylaxis and come to the same

conclusion as NICE. There is no definitive evidence to support the use of antimicrobial prophylaxis for the prevention of infective endocarditis for dental patients. The authors recommend that the Swedish pharmaceutical committees change their recommendations.

Of course even if changes are made to the Swedish recommendations it will not end the matter. Even in the UK where the NICE guidelines have been published in full, there are still clinicians who want to continue antimicrobial prophylaxis for some dental patients with pre-existing cardiac conditions. Will the arguments ever end?

M. V. Martin
Somerset

AUTHOR QUESTIONS AND ANSWERS**1. Why did you undertake this research?**

We undertook this research based on discussions with colleagues about the lack of stringent use of antibiotic prophylaxis among general dental practitioners (GDPs), ie inter- and intraindividual variations in GDPs' administration strategies. Therefore, we decided to do a systematic review to answer the question about what evidence exists on the use of antibiotic prophylaxis. We also knew that local recommendations in some counties in Sweden were ambiguous and hard to interpret. Therefore we also wanted to evaluate the content of recommendations in all of the Swedish counties and compare the content of these with the evidence in recommendations.

2. What would you like to do next in this area to follow on from this work?

With our research we would like to stress the need for a national recommendation that is supported and used in all counties in Sweden. We have had discussions about this and have been invited as members of STRAMA, a nationwide action programme to combat antibiotic resistance. Together with STRAMA we would like to collaborate with this work on a national level. Future questions that are directing our future research are: How should recommendations be developed to gain acceptance among the users? How should they be implemented?