



National Institute for Health and Clinical Excellence

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PRESS RELEASE

NICE guideline on prophylaxis for infective endocarditis set to change current clinical practice

The National Institute for Health and Clinical Excellence (NICE) has today issued a clinical guideline on antibiotic prophylaxis against infective endocarditis (IE). In a significant change to current clinical practice, the guideline recommends that antibiotics to prevent IE should not be given to adults and children with structural cardiac defects at risk of IE who are undergoing dental and non-dental interventional procedures.

IE is an inflammation of the inner lining of the heart, particularly affecting the heart valves, caused by bacterial or other infection. It may arise following bacteraemia in patients who have certain pre-existing heart conditions (see list below). Although IE is a rare condition, with fewer than 10 people in every 100,000 developing it each year, it can be life-threatening. It has been accepted clinical practice to use preventive (prophylactic) antibiotics before dental and some non-dental procedures in people who are considered to be at risk of IE. However, the effectiveness of this treatment in humans has never been properly investigated and clinical practice has been dictated by clinical guidelines based on expert opinion.

This guideline is based on the best available published evidence and a consensus of multidisciplinary, expert opinion within the Guideline Development Group (GDG). The guideline concludes that there is no consistent association between having an interventional procedure, dental or non-dental, and the development of IE and that the clinical effectiveness of antibiotic prophylaxis is not proven. The evidence also suggests that antibiotic prophylaxis against IE for dental procedures is not cost effective and may lead to a greater number of deaths through fatal anaphylactic

reactions than not using preventive antibiotics. The guideline makes a number of key recommendations, including:

- Patients should not be offered antibiotics to prevent IE for any of the following procedures:
 - a dental procedure
 - an obstetric or gynaecological procedure, or childbirth
 - a procedure on the bladder or urine system
 - a procedure on the gullet, stomach or intestines
 - a procedure on the airways, including ear, nose and throat and bronchoscopy.
- Healthcare professionals should regard people with the following cardiac conditions as being at risk of developing IE:
 - acquired valvular heart disease with stenosis or regurgitation
 - valve replacement
 - structural congenital heart disease, including surgically corrected or palliated structural conditions, but excluding isolated atrial septal defect, fully repaired ventricular septal defect or fully repaired patent ductus arteriosus, and closure devices that are judged to be endothelialised
 - previous IE
 - hypertrophic cardiomyopathy.
- Healthcare professionals should offer people at risk of IE clear and consistent information about prevention, including:
 - the benefits and risks of antibiotic prophylaxis, and an explanation of why antibiotic prophylaxis is no longer routinely recommended
 - the importance of maintaining good oral health
 - symptoms that may indicate IE and when to seek expert advice
 - the risks of undergoing invasive procedures, including non-medical procedures such as body piercing or tattooing.
- People at risk of IE who are receiving antimicrobial therapy because they are undergoing a gastrointestinal or genitourinary procedure at a site where there

is a suspected infection should be offered an antibiotic that covers organisms that cause IE.

- Investigate and treat promptly any episodes of infection in people at risk of IE to reduce the risk of endocarditis developing.

Dr Gillian Leng, NICE Deputy Chief Executive, said: “The recent Health Select Committee report called on NICE to make good its commitment to issue guidance in areas where there is evidence of ineffective practice and where discontinuation of these practices might result in more effective treatments and approaches. This guideline does that. Although the anticipated cost savings are quite modest – around £1million across the NHS in England and Wales - the implementation of this guideline will have other far-reaching benefits, notably an increased patient awareness of the risk of IE and a decrease in the number of adverse reactions to antibiotics, such as anaphylaxis. Finally, the implementation of this guidance should reduce the level of antibiotic resistance in the general population, the cost and wider benefits of which we haven’t calculated but are likely to be substantial.”

Dr Barry Cockroft, Chief Dental Officer for England, said: “I am delighted that NICE have produced definitive guidance on this complex issue. This will ensure that dentists can give consistent and evidence based advice to their patients. We will work with NICE and other professional bodies to ensure that this advice is disseminated to the profession so that dentists will be in a position to start applying this guidance immediately.”

David Wray, Professor of Oral Medicine and Chair of the Guideline

Development Group, said: “In recommending that antibiotic prophylaxis should not be offered to people at risk of infective endocarditis undergoing both dental and some non-dental interventional procedures, this new NICE guideline represents a fundamental change in clinical practice. To put this into some kind of context, the evidence considered by the Guideline Development Group showed that everyday activities such as tooth brushing can cause repetitive bacteraemias which almost certainly pose a greater risk for developing infective endocarditis than a single interventional procedure. Also, prescribing antibiotic prophylaxis, which has not been proven to be effective, may lead to a net loss of life due to anaphylaxis. Professional groups must now ensure that their patients are fully informed about the changes and the reasons for this in order to encourage implementation.”

Anne Keatley-Clarke, Chief Executive of the Children’s Heart Federation and member of the GDG, said: “During the past couple of years patients with congenital

heart conditions and their parents have been given contradictory advice regarding the prescribing of prophylaxis for infective endocarditis. We therefore welcome this clear guideline and hope that cardiologists, dentists and other medical professionals will agree to follow it. The guideline will mean a big change for the many heart children who previously received antibiotics before all dental procedures so professionals must be prepared to give these patients and their parents a clear explanation for the changes.”

Ends

Notes to Editors

1. The guidance is available at www.nice.org.uk/CG064

About NICE

2. The National Institute for Health and Clinical Excellence (NICE) is the independent organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health.
3. NICE produces guidance in three areas of health:
 - **public health** – guidance on the promotion of good health and the prevention of ill health for those working in the NHS, local authorities and the wider public and voluntary sector
 - **health technologies** – guidance on the use of new and existing medicines, treatments and procedures within the NHS
 - **clinical practice** – guidance on the appropriate treatment and care of people with specific diseases and conditions within the NHS.