National Institute for Health and Clinical Excellence: prophylaxis against infective endocarditis

Summary and list of all recommendations on antimicrobial prophylaxis against infective endocarditis in adults and children undergoing interventional procedures – issued March 2008

Adults and children with structural cardiac defects at risk of developing infective endocarditis:

Healthcare professionals should regard people with the following cardiac conditions as being at risk of developing infective endocarditis:

• 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 tetralogy of Fallot arteriopathy, and closure devices that are judged to be endochondralized
• previous infective endocarditis
• hypertrophic cardiomyopathy

Patient advice

Healthcare professionals should offer people at risk of infective endocarditis clear and consistent information about prevention, including:

• the risks of undergoing invasive procedures, including non-medical procedures such as body piercing or tattooing

Prophylaxis against infective endocarditis

Antibiotic prophylaxis against infective endocarditis is NOT recommended:

• for people undergoing dental procedures
• for people undergoing non-dental procedures at the following sites:
  – upper and lower gastrointestinal tract
  – genitourinary tract; this includes urological, gynaecological and obstetric procedures, and childbirth
  – upper and lower respiratory tract; this includes ear, nose and throat procedures and bronchoscopy.

Chlorhexidine mouthwash should not be offered as prophylaxis against infective endocarditis to people at risk of infective endocarditis undergoing dental procedures.

Infection

Any episodes of infection in people at risk of infective endocarditis should be investigated and treated promptly to reduce the risk of endocarditis developing.

If a person at risk of infective endocarditis is receiving antimicrobial prophylaxis because they are undergoing a gastrointestinal or genitourinary procedure at a site where there is a suspected infection, the person should receive an antibiotic that causes organisms to be killed.

Overview

Antimicrobial prophylaxis against infective endocarditis in adults and children undergoing interventional procedures

Interventricular endocarditis (IE) is an inflammation of the endocardium, particularly affecting the heart valves, caused mainly by bacteria and occasionally by other infectious agents. It is a rare condition, with an annual incidence of fewer than 10 per 100,000 cases in the normal population. Despite advances in diagnostics and treatment, IE remains a life-threatening disease with significant mortality (approximately 20%) and morbidity.

The predisposing factors for the development of IE have changed in the past 50 years, mainly with the decreasing incidence of rheumatic heart disease and the increasing impact of prosthetic heart valves, nosocomial infection and intravenous drug misuse. However, the potentially serious impact of IE on the individual has not changed (Perrengdat 2006).

Published medical literature contains many case reports of IE being preceded by an interventional procedure, multiple different organisms, many of which could be transferred into the blood during an interventional procedure. Streptococcus, Staphylococcus aureus and enterococci are important causative organisms.

It is accepted that many cases of IE are not caused by these causative organisms (Bruncat et al. 2006), but with such a serious condition it is reasonable to consider that any cases of IE that could be prevented should be prevented. Consequently, since 1955, antibiotic prophylaxis is offered before interventional procedures, including those following a gastrointestinal or genitourinary procedure at a site where there is a suspected infection.

In summary, this guideline recommends that antibiotic prophylaxis is effective for preventing IE and that the evidence is consistent and strong. The rationale for this recommendation is:

• the need to prevent IE as it is a serious condition such as IE it is difficult to treat, can be prevented with antibiotic prophylaxis
• the evidence that antibiotic prophylaxis is effective and protective
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For prophylaxis to be effective, certain requirements must be fulfilled:

1. Identification of patients at risk of IE: identification of the procedures that are liable to provoke bacteremia, and identification of the individuals at risk.

2. Identification of the procedures that are liable to provoke bacteremia and the individuals at risk.

3. Identification of the procedures that are liable to provoke bacteremia and the individuals at risk.

4. Identification of the procedures that are liable to provoke bacteremia and the individuals at risk.

Antibiotic prophylaxis is effective for preventing IE in patients who are undergoing interventional procedures, including those following a gastrointestinal or genitourinary procedure at a site where there is a suspected infection.

In summary, this guideline recommends that antibiotic prophylaxis is effective for preventing IE in patients who are undergoing interventional procedures, including those following a gastrointestinal or genitourinary procedure at a site where there is a suspected infection.