

Endocarditis prophylaxis

☒ **Useful statistics: endocarditis** (from NICE CG 64, 2008)

- Incidence 1 in 10 000
- Mortality 20%

In 2006 the British Society for Antimicrobial Chemotherapy produced guidance on endocarditis prophylaxis (J Antimicrobial Chemotherapy 2006;57:1035-42). The guidance was written by representatives from the UK, Europe and the US. Having reviewed all the evidence they concluded that the risks of endocarditis are much lower than had previously been thought and that very few individuals actually need prophylaxis.

Now NICE have produced guidance that is even more radical (www.nice.org.uk, CG 64, 2008):

- **Nobody requires endocarditis prophylaxis!**
- **Yes really! Nobody required endocarditis prophylaxis any more!**

Prophylaxis against endocarditis

NICE CG 64, 2008

The following adults and children are considered to be at high risk:

- **Previous endocarditis**
- **Valve replacement**
- **Acquired valve disease (stenosis or regurgitation)**
- **Hypertrophic cardiomyopathy**
- **Structural congenital heart disease.** This includes surgically corrected or palliated structural defects **but does not include:**
 - Isolated atrial septal defects (ASD)
 - Fully repaired ventricular septal defects (VSD)
 - Fully repaired patent ductus arteriosus
 - Closure devices considered to be endothelial (the patient will have been told this)

• **However these patients should not be offered endocarditis prophylaxis for dental or any non-dental procedures!**

- Also they **shouldn't** be offered chlorhexadine mouthwashes before dental procedures.

However they should be offered:

- An explanation about why antibiotic prophylaxis is not recommended (no evidence of effectiveness, some evidence of harm).
- Advice on the importance of maintaining good oral hygiene (probably most important preventative measure!)
- The symptoms of endocarditis and when to seek help.

The only time antibiotics are suggested is if a patient is having a surgical procedure for an infection of the GU or GI tract *and they would have been given antibiotics anyway*. In these cases, given that they will already be on antibiotics to treat the infection, the advice is that this antibiotic should cover the organisms that cause endocarditis as well (strep, staph aureus, enterococci). *NB this is not about giving antibiotics when they wouldn't normally have them, but about choice of antibiotic in someone who needs and antibiotic anyway.*

Why is prophylaxis not recommended?

- The assumption has been that prophylaxis reduces the risk of endocarditis, but there is no evidence to prove this is so, indeed there is some evidence it does not.
- Tooth brushing produces a greater bacteriaemic risk than any dental procedure.
- Deaths from anaphylaxis due to antibiotics may outweigh deaths prevented with antibiotics.
- Cohort studies show a poor temporal relationship between timing of the procedure and development of endocarditis (sometimes a time lag of many, many months).
- Some studies show that the risk of endocarditis in those with an 'at risk heart' is no higher in those having a procedure than in those not having a procedure.
- Many cases (up to half) of endocarditis occur in people with no previously identified heart problems.

How does this differ from previous recommendations?

The 2006 Guidance from the British Society for Antimicrobial Chemotherapy issued guidance on endocarditis prophylaxis (J Antimicrobial Chemotherapy 2006;57:1035-42). I'll outline this guidance too as some may continue to follow it either because they haven't caught up with the latest from NICE, or because they don't agree with NICE (see later!). The BSAC also concluded that the risks of endocarditis were much lower than previous thought. However they did identify certain subgroups who should be offered prophylaxis:

- Previous infective endocarditis.
- Mechanical or biological valve replacement.
- Surgically constructed systemic or pulmonary shunt or conduit.

But only if they are undergoing:

- **Dental procedures** ('dental procedure' is one that requires 'dento-gingival manipulation', so a check-up alone would not necessarily require prophylaxis).
- **Piercing of the tongue or oral mucosa** (but not for urethral mucosa piercing – Ouch!)
- **Some hospital based surgical procedures**

But they did not recommend prophylaxis for the sorts of procedures we are likely to get involved in in general practice, including:

Cosmetic piercing of the skin	Terminations
Urethral catheterization	Insertion/removal IUCD
Vasectomy	Smears
Circumcision	Vaginal delivery (C-sections do require prophylaxis)

For dental procedures the antibiotic regimen suggested was:

**amoxicillin 3g po 1 hour prior to the procedure for those aged over 9yrs,
or 600mg clindamycin oral clindamycin if penicillin allergic.**

So what do people think of the new NICE guidance?

An editorial in the Lancet summarised the evidence, highlighting much of the literature reviewed by NICE (Lancet 2008;371:1317-9). It pointed out the poor evidence base for previous recommendations and that huge numbers of patients would be required to have prophylaxis for a tiny number to benefit. However it also says that whilst dentists have welcomed the clear and simple guidance, cardiologists are less sure and are concerned about litigation from patients developing endocarditis after a procedure. The author rightly points out that consensus, not confusion and patchy implementation, would help patients!

A BMJ commentary reveals an interesting twist. It suggests that the British Cardiac Society was so incensed by the laxness of the British Society of Antimicrobial Chemotherapy guidelines outlined above that it asked NICE to review the evidence. Apparently they were pretty unimpressed when NICE went even further!! (BMJ 2008;336:771)

So what does this mean in practice?

Clearly implementation of this is going to take some time, and some may continue to follow the 'old' rules.

In our practice we are planning to write to all our patients flagged as needing prophylaxis against endocarditis to explain what the new guidance says and why, but also to explain that implementation may take some time and therefore they may still continue to be offered prophylaxis by some clinicians. I am sure some patients, like some clinicians, will struggle with this complete reversal of policy and if they continue to want antibiotics pre-procedures we will continue to prescribe them, having discussed the pros and cons of this approach and the current guidance.

Take home messages: Endocarditis prophylaxis

- **No one requires endocarditis prophylaxis!**
- **However certain groups are at risk of endocarditis and need to understand why prophylaxis is no longer recommended, and the symptoms to look out for.**

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