Royal College of
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Ensuring Continued Trust

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Antibiotic Prophylaxis for the Prevention of Infective Endocarditis and Prosthetic Joint Infections for Dentists

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Antibiotic Prophylaxis for the Prevention of Infective Endocarditis and Prosthetic Joint Infections for Dentists

What is the current guideline on antibiotic prophylaxis for patients with prosthetic joints?

In 2012 the American Academy of Orthopaedic Surgeons (AAOS) and the American Dental Association (ADA) released a new evidence-based guideline on the Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures. The new guideline has three recommendations and replaces the previous 2009 AAOS Information Statement on Antibiotic Prophylaxis for Bacteremia in Patients with Joint Replacement.

New Guideline for the Prevention of Orthopedic Implant Infection in Patients Undergoing Dental Procedures
(Dispatch article May/June 2013 Pg. 30)

What are the recommendations under this new guideline?

Based on a collaborative systematic review of the scientific literature, the AAOS and the ADA have found that the evidence does not support routine prescription of antibiotic prophylaxis for patients with joint replacement undergoing dental procedures. As described in the new guideline, the AAOS-ADA recommendations are:

1. The practitioner might consider discontinuing the practice of routinely prescribing prophylactic antibiotics for patients with hip and knee prosthetic joint implants undergoing dental procedures.
2. We are unable to recommend for or against the use of topical oral antimicrobials in patients with prosthetic joint implants or other orthopaedic implants undergoing dental procedures.
3. In the absence of reliable evidence linking poor oral health to prosthetic joint infection, it is the opinion of the working group that patients with prosthetic joint implants or other orthopaedic implants maintain appropriate oral hygiene.

What does the RCDSO recommend to its members?

Dentists should review the most recent guideline from the AAOS and the ADA and implement it in their office.

As evidence does not demonstrate that antibiotics taken before dental procedures help prevent infections of orthopaedic implants, and the routine use of antibiotics in this manner has potential side-effects, such as increased bacterial resistance, allergic reactions, diarrhea and possibly death, members should not prescribe antibiotic prophylaxis unless these patients have a medical condition that may compromise their immune system, suggesting that they may be at greater risk for orthopaedic implant infections.

What types of medical conditions place the patient at greater risk for orthopaedic implant infections?

Medical conditions that may place patients at greater risk for orthopaedic implant infections include (but are not limited to) diabetes, rheumatoid arthritis, cancer, chemotherapy and chronic steroid use. For patients with such medical conditions, decisions about antibiotic prophylaxis should be made in consultation with their physicians in a context of open communication and informed consent.

Who is responsible for determining if antibiotic prophylaxis is required for dental procedures?

The AAOS and ADA have advised that these recommendations are not intended to stand alone. Treatment decisions should be made in light of all circumstances presented by the patient. Treatment and procedures applicable to the individual patient rely on mutual communication between patient, physician, dentist and other healthcare practitioners involved in the patient's care.

What happens if there is a disagreement between the dentist and the physician regarding the decision to prescribe antibiotic prophylaxis?

Members are reminded that patients may present with a recommendation from a physician that is inconsistent with the current guideline for antibiotic prophylaxis. This may reflect a lack of familiarity with the guideline or special considerations about the patient's medical condition of which the dentist is unaware. In such circumstances, members are encouraged to consult with the physician.

Ideally, consensus should be reached among the professionals involved. However, each is ultimately responsible for his or her own treatment decisions.

As a result of the consultation, the dentist may decide to follow the physician's recommendation or, if professional judgement dictates that antibiotic prophylaxis is not indicated, decline to provide it. In the latter circumstance, the dentist may suggest that the physician should prescribe for the patient as she or he deems appropriate.

What is the current guideline on antibiotic prophylaxis for the prevention of infective endocarditis?

In 2007, the American Heart Association published a revised guideline for the prevention of infective endocarditis. This guideline concludes that antibiotic prophylaxis is reasonable only for those patients who have cardiac conditions that put them at highest risk for adverse outcome from infective endocarditis and who therefore derive the greatest benefit from its prevention.

Prevention of infective endocarditis: Guidelines from the American Heart Association

What are the conditions that are associated with the highest risk of adverse outcome from infective endocarditis for which antibiotic prophylaxis with dental procedures is reasonable?

1. Prosthetic cardiac valve or prosthetic material used for cardiac valve repair.
2. Previous infective endocarditis.
3. Congenital heart disease (CHD)*:
   a) Unrepaired cyanotic CHD, including palliative shunts and conduits.
   b) Completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first 6 months after the procedure.
   c) Repaired CHD with residual defects at the site of adjacent to the site of a prosthetic patch or prosthetic device (which inhibit endothelialisation).
4. Cardiac transplantation recipients who develop cardiac valvulopathy.

*Except for the conditions listed above, antibiotic prophylaxis is no longer recommended for any other form of CHD.

Do patients with stents require antibiotic prophylaxis?

No. Antibiotic prophylaxis is not routinely recommended for patients with coronary artery stents. It is recommended, however, for patients with these devices if they undergo incision and drainage of infection at other sites (e.g. abscess) or replacement of an infected device.

My patient has just had heart surgery. Does he or she require coverage?

Patients who have had surgery for placement of prosthetic heart valves or prosthetic intravascular or intracardiac materials are at risk for the development of an infection and should be given premedication according to the 2007 AHA guidelines.

There is no evidence that patients who have had coronary artery bypass graft surgery are at increased risk of infective endocarditis (IE) and therefore, these patients do not need antibiotic prophylaxis.

There are insufficient data to support specific recommendations for patients who have undergone heart transplantation. The guideline advises that the use of antibiotic prophylaxis for heart transplant recipients who develop cardiac valvulopathy is reasonable.

Do all patients with heart valve replacements, whether the valves are prosthetic or originated from humans or animals (e.g. bovine, porcine), require antibiotic prophylaxis?

Yes.

If antibiotic prophylaxis is required for the prevention of infective endocarditis for the patients in the highest risk categories, what is the appropriate regimen?

The drug of choice is Amoxicillin 2 grams taken orally 30-60 minutes before the dental procedure.

Which antibiotic should be prescribed if a patient is allergic to penicillin or ampicillin?

The following antibiotics should be considered:

- Clindamycin 600mg
- Azithromycin or Clarithromycin 500mg
- Cephalexin 2 g*

*Cephalosporins should not be used in individuals with immediate-type hypersensitivity reactions (such urticaria, angioedema or anaphylaxis) to penicillins or ampicillin.

My patient forgot to take the antibiotic. What should I do?

Antibiotic prophylaxis should be taken in a single dose 30-60 minutes **before** dental treatment. This time period is recommended so that there will be high blood levels of antibiotic at the time bacteremia occurs. If the patient has not taken the antibiotic as required, the dentist should administer it and then allow sufficient time to elapse prior to commencing treatment.

If the antibiotic is **inadvertently** not administered, it may be given up to 2 hours after the procedure. However, it is important to note that the post-exposure protocol is intended to be used rarely, and not routinely as a means of managing patients who neglect to take their antibiotics as required.

I have a patient who is already taking antibiotics. How does that affect the prophylactic regimen?

If a patient is already receiving antibiotic therapy with an antibiotic that is also recommended for antibiotic prophylaxis, then it is prudent to select an antibiotic from another class, rather than increase the dose of the currently administered antibiotic. For example, if a patient is already taking amoxicillin, the dentist should select clindamycin, azithromycin or clarithromycin for antibiotic prophylaxis.

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