Guidelines for the Use of Antibiotic Prophylaxis

Saskatchewan Dental Hygienists' Association

Rationale:

Dental hygienists are required to use current knowledge in their practice and to assess the client to determine whether special precautions are necessary. The need for antibiotic prophylaxis should be considered on an individual basis in conjunction with the health care provider most familiar with the client's specific condition. Treatment decisions should be made in light of all circumstances presented by the client. Treatments and procedures applicable to the individual client rely on mutual communication between client, dental hygienist, physician, dentist, and other health care practitioners. Ideally dental hygienists will consult with the client's cardiologist to determine the need for antibiotic prophylaxis prior to invasive dental hygiene procedures. If the dental hygienist is unable to consult with the cardiologist, a collaborative approach with the client's physician and/or dentist should take place to determine the client's need.

The dental hygienist is ultimately responsible for making the decision whether or not to proceed with dental hygiene services.

Changes to the recommendations for antibiotic prophylaxis for at risk clients have created some concern in the dental profession. In the past, clients deemed at risk for bacterial infection in relation to invasive dental procedures were prescribed prophylactic antibiotics. Recent research has indicated a need to revise these guidelines, resulting in fewer clients requiring the need for prophylaxis. There is evidence that antibiotic resistance, and adverse drug reactions from antibiotic prophylaxis may create more harm than benefit; therefore, it is essential to follow the most recent research available.

The following recommendations are based on the current guidelines of the American Heart Association (AHA) and the American Academy of Orthopaedic Surgeons (AAOS). These guidelines are provided to aid dental hygienists in their clinical judgment regarding antibiotic prophylaxis for clients who have had medications prescribed for antibiotic prophylaxis prior to dental hygiene procedures.

Registered dental hygienists are encouraged to visit the following websites for current guidelines on antibiotic premedication:

- The American Heart Association: www.americanheart.org
- The Canadian Dental Association: www.cda-adc.ca
- The American Dental Association: www.ada.org

Bacteremic Dental Hygiene Procedures that Require Antibiotic Prophylaxis

When prophylactic antibiotics **are recommended**, the following dental procedures are considered to have the greatest potential to produce a bacteremia (i.e. procedures which manipulate the gingival tissues and which may cause bleeding and the presence of viable bacteria in the blood):
Periodontal procedures including: • Periodontal probing • Scaling and root planing of teeth • Curetting tissue • Periodontal surgery • Subgingival placement of antibiotic fibers and strips • Prophylactic cleaning (polishing) of teeth or implants where bleeding is anticipated
Tooth extraction
Suture removal
Biopsies
Dental implant placement and replantation of avulsed teeth
Endodontic instrumentation or surgery only beyond the apex
Initial placement of orthodontic bands
Intraligamentary and intraosseous local anaesthetic injections

Prophylactic antibiotics **are not recommended** for the following dental procedures:
Local anesthesia injections (other than intraligamentary)
Placement of rubber dam
Placement of removable prosthodontic or orthodontic appliances
Impressions
Intra-oral radiographs

For clients with total joint replacement:

According to current research, the majority of clients with joint replacement **do not** require prophylactic antibiotics (ADA, 2015). This guideline is suggested for clients with generally good health.

Clients with a joint replacement that may require consultation with the client's physician or specialist, and may require prophylactic antibiotics to proceed with dental hygiene care include:

- Clients with conditions such as previous history of joint infection
- Clients with immune-compromising conditions (see other health conditions listed below)

The College of Dental Hygienists of British Columbia (CDHBC) has an excellent resource specific to joint replacements at: http://www.cdhbc.com/Practice-Resources/Interpretation-Guidelines/Antibiotic-Premedication-(Orthopaedic-Joint-Replac.aspx

Current Indications for Prophylactic Antibiotics Include a Client with a History of any of the Following (AHA, 2007):

- Have a history of infective endocarditis
- Have a prosthetic heart valve
- Have a cardiac transplant that develops cardiac valvulopathy
- Unrepaired cyanotic congenital heart disease, including palliative shunts and conduits
- A completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months
- Any repaired congenital heart defect with residual defect at the site or adjacent to the site of a prosthetic patch or a prosthetic device (that inhibit endothelialization)

Other Health Conditions that may Require Antibiotic Prophylaxis

- Clients with white blood cell counts of less than 3500 cells/mm^3, or absolute neutrophil count of less than 1000 cells/mm^3.
- Clients with uncontrolled diabetes, systemic lupus erythematosus, chemotherapy, transplant recipients, AIDS, immunosuppressive drug therapy, blood dyscrasias

Current Contra-indications for prophylactic antibiotics include a client with a history of:

- Mitral valve prolapse
- Rheumatic heart disease
- Bicuspid valve disease
- Calcified aortic stenosis
- Congenital heart conditions such as ventricular septal defect, atrial septal defect and hypertrophic cardiomyopathy
- Surgical repair of atrial septal defect, ventricular septal defect or patent ductus arteriosus (without residue beyond 6 months)
- Previous coronary artery bypass surgery
- Heart murmurs
- Previous Kawasaki disease
- Cardiac pacemakers and implanted defibrillators (intravascular and epicardial)
- Coronary artery disease

Prophylactic Antibiotic Regimen

Regimen: Single dose 30-60 minutes before procedure			
Situation	**Drug**	**Adults**	**Children**
Oral	Amoxicillin	2.0 g orally	50mg/kg to a max of 2.0g
Penicillin allergic	Clindamycin	600 mg orally	20mg/kg up to a max of 600 mg
Unable to take oral medications	Ampicillin or Cefazolin	2.0 g IM or IV 1.0 g IM or IV	50mg/kg to a max of 2.0g IM or IV 50mg/kg to a max of 2.0g IM or IV
Penicillin allergic and unable to take oral medications	Clindamycin	600 mg IM or IV	20mg/kg up to a max of 600 mg IM or IV

NOTES:

- If more than one appointment is required to complete the treatment, there should be a minimum of 9-14 days between appointments.
- Clients should be informed to seek urgent care if symptoms of malaise, fatigue, fever, chills, weakness, muscle pain, or joint pain arise within 14 days following dental hygiene care.
- If a determination recommending antibiotic prophylaxis is made in a dental office setting, it is recommended that a letter be provided to the client to take to their treating physician informing them of the prophylactic coverage and directions that were provided.

Timing of Antibiotic Administration

An antibiotic for prophylaxis of a cardiac condition should be administered in a single dose before the procedure. If the dosage of antibiotic is inadvertently not administered before the procedure, the dosage may be administered up to 2 hours after the procedure. However, administration of the dosage after the procedure should be considered only when the client did not receive the pre-procedure dose (Wilson et al., 2007). THIS PROTOCOL IS FOR EMERGENCIES ONLY AND MAY NOT BE USED FOR EXPEDIENCY OF THE APPOINTMENT OR THE CONVENIENCE OF THE OFFICE.

Documentation & Responsibility

Dental hygienists are reminded that they are responsible for the treatment they render. If the dental hygienist does not believe that it is in the best interest of the client to proceed with treatment, they must not do so. Should the physician or dentist elect to take responsibility for making this determination, the direction provided must be clearly documented in the client's chart.

The dental hygienist should always ask if the client has taken the medication and document that fact. Dental hygienists are responsible for informing the client of the possible consequences of treatment that may occur if the prophylactic antibiotics have not been taken within the specified time period. If, following a detailed explanation of the risks and benefits of prophylactic coverage to the client and if the dental hygienist is confident that the client understands the ramifications, then the dental hygienist may choose to proceed or not to proceed based on whether or not the risks outweigh the benefits.

Documentation of all of the facts is essential. As a precaution, every client who requires prophylactic antibiotics should have a physician's letter in his/her file.

References

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The American Academy of Orthopaedic Surgeons: Guideline on Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures http://www.aaos.org/Research/guidelines/PUDP/dental_guideline.asp

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