



Implications of Certain Medical Conditions on Dental Treatment Planning in Order to Avoid Complications: A Handy Reference for Private Practitioners

KEYWORDS

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ABSTRACT *With urbanization and a changing lifestyle, diseases such as diabetes mellitus, hypertension, and heart diseases are on the rise. In addition, infectious diseases like TB, HIV etc add to the burden. Consequently, dentists have to deal with an increasing range of medical problems that affect dental treatment and hence they must be aware and able to handle medical emergencies which may arise in practice. Certain systemic diseases may require special care and attention on our part as dentists. Listed below are a few conditions which may require some modification or special protocol to be followed while formulating a treatment plan and carrying out the treatment to our utmost capacity and perfection. This may prove to be a handy reference to treat a few cases which we routinely encounter in our daily practices.*

UNCONTROLLED TYPE II DIABETES MELLITUS

Often periodontitis and uncontrolled diabetes mellitus (type II), both chronic conditions, are encountered together. Both conditions require frequent professional assessment and thorough patient education. Studies have shown greater gingival bleeding and/or periodontitis in patients with poorly controlled diabetes than in control subjects without diabetes or those with controlled diabetes.

Tips for treating such patients:

- 1) Understanding the disease status, including medications regime etc by interacting with the patient and the diabetologist, physician and nutritionist.
- 2) Maintaining patient's oral health by carrying out oral prophylaxis protocols at regular six monthly intervals.
- 3) Giving early morning appointments to reduce stress; epinephrine release due to stress has a counter regulatory effect on insulin action. This results in breakdown of glycogen in muscle and to a lesser extent in the liver and subsequently to hyperglycemia.
- 4) Prescribing pre and post surgical antibiotics particularly if significant infection and pain has encountered. Tetracyclines are the antibiotics of choice because they decrease the production of collagenase (whose collagenolytic activity causes periodontitis) which is often elevated in diabetics.
- 5) Explaining to the patient the probable systemic and oral complications and instructing him/her about rigorous oral hygiene practices and proper diet control regimen.
- 6) Counseling the patient against smoking if the patient is a smoker.

HYPERTENSION

Managing a dental patient with hypertension can be complicated as the associated stress with a dental appointment can cause a further rise in the blood pressure. Also undetected hypertension and insufficiently treated hypertension enhances the risk of acute cardiovascular complications such as angina myocardial infarction and stroke while undergoing dental treatment.

Tips for treating such patients:

- 1) Giving afternoon appointments instead of morning ones because in these patients there is an early morning surge in blood pressure which peaks by midmorning. There is less likelihood of this fluctuation in the afternoon.
- 2) Measuring B.P. at every visit especially in patients in whom major dental procedures are planned. Any patient with A B.P. higher than 210/120 mm Hg should be referred

immediately for medical evaluation. (Remember dentists are in a better position to help detect hypertensives as they are more likely to see "healthy" patients than the physicians.)

- 3) Alleviating anxiety-related B.P. by proper preoperative reassurance. A sedative may be given a night before. Use of nitrous oxide sedation may reduce B.P. to acceptable levels allowing ease of initiation of local anaesthesia.
- 4) Avoiding sudden postural changes (such as sitting-to-supine or vice versa) in order to avoid orthostatic hypotension.
- 5) Stopping any anticoagulants 2-3 days prior, on the day of, and 2-3 days after any surgical procedures in order to avoid bleeding.
- 6) Minimizing the use of vasoconstrictors as there is a risk of cardiovascular disease. While there is no official maximum dose of vasoconstrictors when administered with local anaesthetic, 2 to 3 cartridges of lidocaine 1:1,00,000 adrenaline is considered safe in ambulatory patients.

TUBERCULOSIS

Dental practitioners should take a proper history and should be able to evaluate the signs and symptoms of active TB as he/she and his/her staff are at risk due to the potentially infectious nature of this disease. If in the active phase, elective dental treatment should be delayed until physician confirms that the disease is no longer infectious. If the patient is presenting with minimal or no risk of infection, then he/she should be managed with the universal infection control procedures.

Tips for treating such patients:

- 1) Restricting treatment to emergency pain relief only, in active TB patients.
- 2) Asking the patient to observe strict cough etiquette
- 3) Isolating active TB patients in a single room preferable with air ventilation to the outside of the building away from the patients waiting room
- 4) Using high efficiency particulate air (HEPA) filtering masks by dentists and staff. Loose surgical mask should be avoided. A full face visor is preferable.
- 5) Avoiding high speed dental drills and ultrasonic scalers, as these produce aerosols.
- 6) Avoiding long dental procedures that could stimulate coughing and dispersal of infectious particles.
- 7) Heat sterilizing all instruments after the appointment as mycobacterium tuberculosis is resistant to chemical disinfectants.
- 8) Avoiding any kind of risk of contamination by using as many disposables as possible

ASTHMA

Most asthma patients are on inhaled corticosteroids and beta adrenergic agonists (salbutamol). These increase the risk of oral infection with oropharyngeal candida as well as dry mouth (xerostomia) leading to rapid decay of the teeth.

Tips for treating such cases:

- 1) Reminding the patient that cleaning the oral cavity after every intake of food is mandatory as the xerostomia within the mouth leads to rapid decay.
- 2) Counseling the patient on his dietary requirements.
- 3) Using preventive measures like pit and fissure sealants in permanent molars. Topical fluorides may be beneficial in child patients.
- 4) Recalling for checkups should be more frequent.
- 5) Advising patients to rinse the mouth after every inhaler use becomes mandatory
- 6) Scheduling patients appointment for late morning or late afternoon to minimize the risk of an asthmatic attack
- 7) Not carrying out any treatment if the patient has forgotten to bring his normal medication (inhalers) and such medication is otherwise unavailable
- 8) Minimal using of dentifrices, fissure sealants, methyl methacrylate (monomer), natural rubber latex and glutaraldehyde disinfectants as these are likely to precipitate an asthmatic attack
- 9) Avoiding the use of local anaesthetic containing sodium metabisulphite as it is a highly allergenic preservative.
- 10) Avoiding treating patients prone to severe abrupt episodes of airway obstruction, in the dental clinic. Such patients may be treated in a good hospital with adequate equipment to deal with a sudden asthmatic attack.

RECENT MYOCARDIAL INFARCTION

Patients who have sustained a myocardial infarction within the last 6 months are at increased risk of an additional infarction. During this 6 month period dental treatment is generally limited to drainage of an abscess, tooth extraction and pulpectomies which should be carried out in a hospital setting.

Tips for treating such patients:

- 1) Consulting the physician for a written consent for dental treatment and withdrawals of anticoagulants for a few days.
- 2) Reducing stress during dental procedures by giving shorter appointments preferably in the morning when the patient is well rested and has a great physical reserve
- 3) Using profound local anaesthetic to minimize discomfort during treatment
- 4) Avoiding Aspirin and other NSAIDS which increase the chances of bleeding
- 5) Avoiding the use of tetracycline which may increase the anticoagulation by reducing the production of Vitamin K and interfering with prothrombin formation.
- 6) Keeping in mind the two major emergencies i.e. chest pain and acute lung edema can take place; appropriate emergency medication for these two conditions must be kept handy.

These are five medical conditions frequently encountered in our daily practice. This handy review may be of use to the dental practitioner as a day to day reference on some precautions to be taken for the patients and some precautions to be taken by the practitioner in the interest of himself / her self and his /her staff.

REFERENCE

1. Case studies in Dentistry ; Indian Journal of clinical practice 2011; Dr.K.K. Agarwal