Volume : 2 | Issue : 5 | May 2013 • ISSN No 2277 - 8179

Research Paper

Medical Science

KEYWORDS :

Periodontal Treatment of Medically Compromised Patients Author

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Many patients seeking dental care have significant medical conditions that may alter both the course of their oral disease and the therapy provided. Therefore, the therapeutic responsibility of the clinician includes identification of the patient's medical problems to formulate proper treatment plan.

A. Cardio vascular disease

i. Hypertension

Classification of adult blood pressure (1997, 6th report of the joint National committee on Prevention, Detection, Evaluation and Treatment of hypertension)

Classification	Systolic BP (mm Hg)	Diastolic BP (mm Hg)	Dental treatment modification
Normal	< 130	< 85	No changes in dental treatment
High Normal	130-139	85-89	No changes in dental treatment
Hypertension			
Stage 1	140-159	90-99	* Inform patient of findings * Routine medical consultations /referral
Stage 2	160 – 179	100 – 109	* Inform patient * Routine medical referral * Selective dental care (routine examination, prophylaxis, restorative, non surgical endodontics and periodontics) minimize stress
Stage 3	> 180	≥ 110	* Inform patient * Immediate medical consultation/referral * Emergency dental care only (to alleviate pain, bleeding, infection), minimize stress

- Local anesthesia with not greater then 1:100,000-concentration epinephrine, nor a vasopressor used to control bleeding.
- Intra ligamentary injection generally contra indicated
- Afternoon appointments preferred

2. Ischemic heart disease

a. Unstable angina

- Treat for emergencies only and then is consultation with the patients' physician

b. Stable angina

- Can undergo elective dental procedures
- Stress reduction important – profound local anesth

Conscious sedation

- Supplemented oxygen via cannula may help present intra operative anginal attacks
- Patient instructed to bring medication to dental appointment
- Restricted use of local anesthesia similar to hypertension
- If patient becomes fatigued or uncomfortable or has a sudden change in heart rhythm or rate during a periodontal procedure, the procedure should be discontinued as soon as possible

c. Variant angina (Prinzmetal angina)

- The presence of variant angina, especially is the absence of vascular lesions, should be reported to the physician to rule out drug abuse
- Vasoconstrictors should be used with caution

d. Myocardial infarction

- Elective dental care usually provided 6 months after myocardial infarction
- Employ same caring principles as with stable angina

3. Congestive heart failure

- Patients with poorly controlled or untreated congestive heart failure are not candidates for elective dental procedures.
- Consult physician regarding the severity, underlying etiology and current medical management
- Medications may have a side effect as periodontal therapy
- Orthopnea in some congestive heart failure patients may require placing them at a comfortable position.
- Short appointments, stress reduction (with profound local anesthesia and conscious sedation) and supplemented oxygen to be considered.

4. Cardiac pacemakers and automatic defibrillators

- Consult with physician to determine underlying cardiac status, type of pacemakers as automatic defibrillator and any precautionary measures to be taken.
- Now bipolar pace makers used, which are not affected by dental equipment.
- Automatic defibrillators activate without warning when certain arrhythmias occurs. This may endanger the patient during dental treatment because of sudden patient movement.
- Stabilization of the operating field during periodontal treatment with bite blocks or other devices can prevent unexpected trauma

5. Infective endocarditiis

Preventive measures to reduce the risk of infective endocarditis during periodontal therapy include the following

1. Define the susceptible patient
2. Provide oral hygiene instruction
3. Currently recommended antibiotics regimens be practiced will all susceptible patients.
4. Treatment should be designed for susceptible patients to accommodate their particular degree of periodontal involvement.

- Eliminate infection. Teeth with severe periodontitis and poor prognosis -extracted, less severe - maintained.
- Antibiotic coverage with pre treatment chlorhexidine mouthwash recommended
- Reduce the number of visits, to decrease development of resistant bacteria.
- Allow at least 7 days (10-14 days, ideally) between appointments
- Patients who have had periodontal surgery are not generally placed on antibiotics for the first week of healing (unless there are specific indications to do so).
- When possible, sutures that resorb in a short period of time (chromic cat gut) indicated in-patient at risk of infective endocarditis.
- Regular recall appointments.

6. Cerebrovascular accident

- Physicians referral necessary

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- To prevent stroke, active infections should be treated aggressively.
- Education of patient regarding importance of oral hygiene
- Long-term chlorhexidine rinses useful.

Patients who are seen after a stroke should be treated according to following guidelines.

1. No therapy at least for 6 months.
2. During therapy minimum stress and minimum effective dose of local anesthesia with concentration of epinephrine > 1:100,000 contra indicated
3. Light conscious sedation and oxygen useful
4. Anti coagulant regimen adjusted in consultation with physician prior to periodontal surgery.

5. Monitor blood pressure carefully.

B. Endocrine disorders

1. Diabetes

The diabetes patient requires special precaution in periodontal therapy. To minimize the risk of intra operative emergency; clinicians need to consider a number of issues before initiating dental treatment.

i. Medical history:

It is important for clinicians to take a good medical history and assess glycemic control at the initial appointment.

- Patients undergoing major surgical procedures may require adjustment of insulin dosages or oral anti-diabetic regimens.
- If necessary, the dentist should consult with the patient's physician.

ii. Scheduling of visits

- Morning appointments are advisable, since endogenous cortisol level higher at this time (cortisol increases blood sugar levels)
- For patients receiving insulin therapy, appointments should be scheduled not to coincide with peaks of insulin activity.

iii. Diet

- Important that patient has taken both the medication and eaten normally to avoid hypoglycemia
- For certain procedures, example: conscious sedation, where the diet has to be altered, the physician is consulted.

iv. Blood glucose monitoring

- Measure the blood glucose level before beginning a procedure.
- Patient with low plasma glucose given oral carbohydrate
- Patient with significantly elevated blood glucose levels refer to medical consultation before performing any procedure

v. During treatment

- Most common complication of diabetes mellitus therapy that can occur in the dental office is a hypoglycemic episode.
- Definitive management of hyperglycemia requires medical intervention and insulin administration.

vi. After treatment

- Patients with poorly controlled diabetes mellitus are at a greater risk of developing infections and may demonstrate delayed wound healing.
- Acute infection can adversely affect insulin resistance and glycemic control.
- Antibiotic coverage may be necessary for patients with overt oral infections.
- If the dentist anticipates that normal dietary intake will be affected after treatment, insulin or oral anti diabetic medication dosages may need to be appropriately adjusted in consultation with the physician.
- Salicylates increase insulin secretion and sensitivity and potentiates the effects of sulfonylureas. Therefore, aspirin and aspirin containing compound are avoided for patients with diabetes mellitus.

2. Thyroid disorders.

i. Thyrotoxicosis or poorly controlled thyroid disorders

- Should not receive therapy until their condition stabilizes
- Medications such as epinephrine and other vasopressor amines not to be given.

ii. Hyperthyroidism

- Carefully evaluated to determine the level of medical management.
- Treated in a way that limits stress and infection
- Medication such as epinephrine and other vasopressors given with caution

iii. Hypothyroidism

- Careful administration of sedatives and narcotics due to potential for excessive sedation

3. Adrenal insufficiency

Acute adrenal insufficiency is associated with significant morbidity and mortality owing to peripheral vascular collapse and cardiac arrest. In addition, many of these patients cannot tolerate the stress caused by dental anxiety, surgical procedures, trauma or infection.

Dental management guidelines for patients with adrenal insufficiency

- Define risk subjects
- Ensure patients take their usual glucorticoid dose before a stressful surgical procedure.
- Schedule surgery in the morning, when cortisol level usually is highest.
- Provide proper stress reduction, since anxiety can increase cortisol demand.
- Minor surgeries require minimal steroid coverage.
- Major surgeries and those lasting more than one hour and involving general anesthesia should be performed in a hospital with steroid supplementation.
- Use of nitrous oxide-oxygen or intravenous / oral benzodiazepene sedation helpful.
- Avoid general anesthesia for out patient procedures, since it increases glucocorticoid demand.
- Avoid use of barbiturates, since these drugs increase the metabolism of cortisol and decrease blood level of cortisol.
- Discontinue drug therapy that decreases cortisol levels (e.g.: ketoconazole) at least 24 hours before surgery, with the consent of physician.
- Provide adequate post-operative pain control.
- Monitor blood pressure throughout the procedure and after. Any fall below 100/60 mm Hg should receive fluid replacement and if needed corticosteroids.
- Recognize signs of hypotension, hypoglycemia and hypovolemia and take corrective action quickly.