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# Dental management in medicaly compromised patients

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**Abstract**
Dental surgery is a profession and not a trade; medical problems can influence oral health and health care, which in turn can influence general health and health care as well. Good oral health is not only essential for good overall health and freedom from the pain and suffering associated with oral health problems, but also influences self-esteem, quality of life, and performance at school and at work. Improvement in the beauty and harmony of facial appearance has been the main intention of good oral health and suffering from vulnerable disease leads to disturb the mental health and lifestyle practices of a community. The moral obligations of the doctors is to act in the patient's best interest, so everyone has to work together as team towards the therapeutic approach. Though it is very important to have a thorough understanding of the patient's medical history and how to manage their dental care. This helps prevent medical emergencies and complications.

**Keywords:** Dental management, medically compromised patients, oral health, general health, facial appearance, dental care

## Introduction

**"If your eyes are the window to your soul, then your mouth is a mirror of your health"**

With advancement in the technology & medical science there has been also increase in the various diseases & disorders due to lifestyle changes, dietary changes, etc. The practice of dentistry today is far different from past one or two decades also, not only in dental techniques and procedures but also in the kinds of patients encountered day to day life [1]. Knowingly, Dental surgery is a profession and not a trade; medical problems can influence oral health and health care, which in turn can influence general health and health care as well. So, it is our duty to treat our patients in an appropriate way, considering both their dental needs and any special considerations related to their medical and drug history. Secondly, to Develop strategies to identify patients at risk of medical problems, to assess the severity of those risks and, seek for the advice from a colleague with special competence in the relevant fields.

Good oral health is not only essential for good overall health and freedom from the pain and suffering associated with oral health problems, but also influences self-esteem, quality of life, and performance at school and at work [2]. Improvement in the beauty and harmony of facial appearance has been the main intention of good oral health [3] and suffering from vulnerable disease leads to disturb the mental health and lifestyle practices of a community.

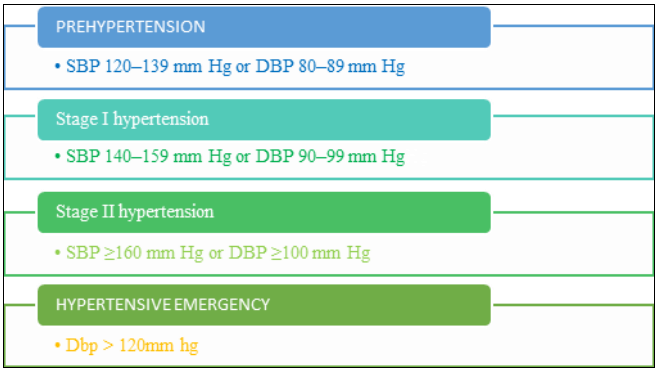
What does this term medically compromised means? Any patient arriving with the known/ unknown medical condition who may or may not be undergoing any treatment are medically compromised patient.

As we all know there are plethora of diseases which may compromise patient health. Recapitulating the previous seminar of med emergency and focusing on compromised condition which we as dental professionals encounter commonly. I will be focusing on 2 things- interpreting and intercepting signs and symptoms of inherent ds itself and adjusting our treatment accordingly.

## Hypertension

Blood pressure reading >140/90 mm Hg in otherwise healthy individuals [4].

According to James PA *et al* [5]. hypertension can be categorized into 4 categories:




**Prevention and management:**

- May present with difficulty in achieving hemostasis after treatment.
- Defer elective dental treatment if BP is ≥160/100 mm Hg.

**Take care:**

- Limit Local Anesthesia to ≤4mL (1:100,000 epinephrine).
- Monitor BP constantly & antihypertensive drug administration based on precipitating causes for hypertension (angiotensin receptor blockers like telmisartan, valsartan, losartan) [6].
- Limit stress to the patient during procedure.
- premedicate patients with increased stress with oral or inhalational sedative to avoid stress induced hypertension.

- Prescribe NSAIDs post dental treatment cautiously. If patient is undergoing treatment for hypertension, it can decrease the effects of antihypertensive drugs and elevates the effects of antimicrobials and antiallergic drugs.

**Ischaemic heart disease**

The basics of safe dental treatment of patients with cardiovascular diseases comprise a detailed medical history, including complaints, allergies, medications, and specialist recommendations. It is important to monitor the patient's condition and to interrupt the procedures when the patient becomes restless or cardiac problems arise. An angina attack can occur in the dental chair due to stress, pain and anxiety triggers [7]. Pain can be felt in the jaw, from where it can radiate to the neck and throat, so in some cases, the patient and the dentist may interpret it as toothache.

**Angina pectoris**

Substernal pressure or squeezing sensation (Levine sign) due to increased oxygen demand on the myocardium.

Pain radiate to the neck and arms and usually is relieved at rest.

**Sublingual nitroglycerin (NTG) 0.4-0.6mg tablet**

GTN- 0.4 mg/puff spray or 0.4–0.8 mg oral spray.

If symptoms persist myocardial infarction should be suspected.

Patients taking nonselective beta blocker, excessive amounts of epinephrine may cause a dangerous elevated BP.

Patients on nitrates are prone to the risk of hypotension so, should be monitored carefully.

**Management [8]:**

- Dental treatment can be undertaken 6 weeks after myocardial infarction.
- LA with vasoconstrictor <0.04 mg can be used.
- Antibiotic prophylaxis is usually not required.
- Schedule short dental visits in the early afternoon.
- Antiplatlelet treatments such as aspirin/ warfarin may potentiate excessive postop bleeding.
- If patient is taking warfarin (Coumadin), the INR should be 4 or less before performance of invasive procedures [9].
- Antibiotic prophylaxis for patients with a history of Coronary artery bypass graft, balloon angioplasty or stent is recommended.

**Bridging anticoagulation**

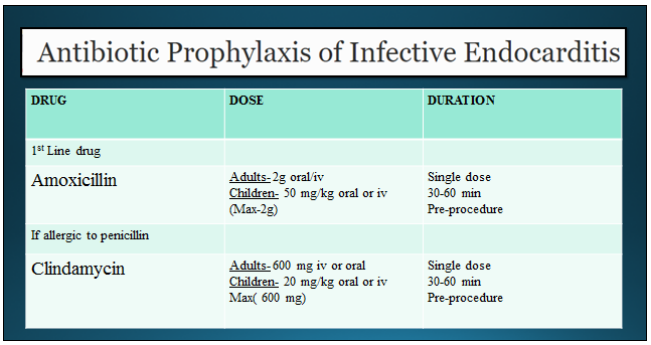
Warfarin 4-6 days in Heparin has 3-4hrs of duration of action so thrombotic episode chances is reduced from days to few hours. Warfarin is bridged with lmw heparin 5-6 days before surgery and resumed after 24hrs of surgery and this bridging is continued until effect of warfarin had resumed and tranexamic acid containing M/W recommended post op to prevent bleeding [10].

**Infective Endocarditis**

Another cardiac condition for which antibiotic prophylaxis is mandatory which is associated with bacteremia in patient with prosthetic heart valve and may otherwise prove fatal

Dental procedures that involve the manipulation of gingival tissues or the periapical region of teeth or perforation of the oral mucosa can produce a bacteremia [11].

**Table 1:** European Society of Cardiology (ESC) Guidelines on the Prevention, Diagnosis and Treatment of Infective Endocarditis, 2015



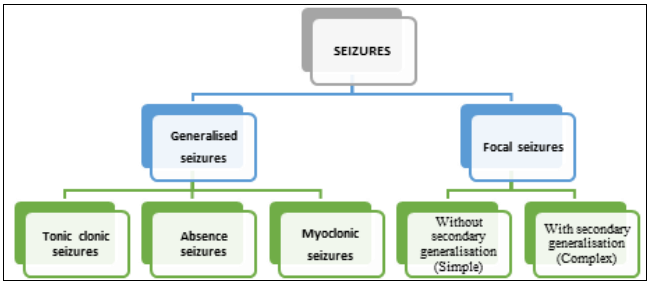
Antibiotic Prophylaxis of Infective Endocarditis

| DRUG | DOSE | DURATION |
|---|---|---|
| 1st Line drug | | |
| Amoxicillin | Adults- 2g oral/iv<br>Children- 50 mg/kg oral or iv (Max-2g) | Single dose<br>30-60 min<br>Pre-procedure |
| If allergic to penicillin | | |
| Clindamycin | Adults- 600 mg iv or oral<br>Children- 20 mg/kg oral or iv Max( 600 mg) | Single dose<br>30-60 min<br>Pre-procedure |

**Epilepsy**

Epilepsy is a group of disorders of the CNS characterized by paroxysmal cerebral dysrhythmia, manifesting as brief episodes (seizures) of loss or disturbance of consciousness, with or without characteristic body movements (convulsions), sensory or psychiatric phenomenon.

**Classification of seizures**




**Oral manifestations**

- Dentofacial trauma to soft and hard tissues.
- Dislocation/ Subluxation of the TMJ due to trauma.
- Trauma to tongue due to seizure

**Prevention:**

- Avoid removable appliances.
- Avoid trigger factors for known epileptic patients

**Management:**

- Position the patient on his side, prevent tongue fall/bite by guedel airway/ bite block.
- If seizures do not stop or recur within 3-4 minutes, Lorazepam 4 mg injected i.v. over 2 min

**Drug interaction:**

A careful history and drug monitoring is necessary while treating any patient on epilepsy medication.

- **Valproic acid** side effect- excess bleeding and fulminant hepatitis (<3yrs age)

**Alternative:** Lamectal, lamotrigine alternative for valproic acid

- **Phenytoin** induced gingival enlargement

**Alternative:** Levetiracetam alternative drug for phenytoin

**Cerebrovascular Accidents**

**Prevention and management:**

- **Antiplatelet drugs:** aspirin, clopidogrel, dipyridamole reduces chances of TIA and stroke.

- Fibrinolytics like i.v. streptokinase, urokinase (given in ischemic stroke only)- haemorrhage (major complication)
- In case of severe bleeding during dental procedure- antifibrinolytic agent (Tranexaemic acid) is used.

**Asthma**

Paroxysmal affection of the respiratory organs, characterized by great difficulty of breathing, tightness across the chest, and a sense of impending suffocation, without fever or local inflammation [12].

The most common causes of asthma exacerbations are pollens, spores, house dust, and insect, viral infections of respiratory tract or smoking. The medical management of asthma depends upon its severity either mild, moderate or severe with pharmacological agents like bronchodilators, anti-mucolytic agents, anticholinergics or corticosteroids. The supportive treatment of acute severe asthma includes supplemental oxygen, fluid and electrolyte maintenance, anxiety relief, and endotracheal intubation and, in extreme situations, mechanical ventilation [13].

The following steps should be taken to manage an acute asthmatic attack in the dental office:

1. Discontinue the dental procedure and allow the patient to sit or lie down in a comfortable position
2. Keep the airway open and administer ~2-agonists with inhaler or nebulizer
3. Administer oxygen via face mask nasal hood, or cannula
4. If no improvement takes place and the patient is worsening, administer epinephrine subcutaneously (1:1000 solution, 0.01 mg/kg of body weight to a maximum dose of 0.3 mg), and summon medical assistance [14].

**Tuberculosis**

Tuberculosis is a potentially serious and contagious infection mainly affecting lungs & other parts of the body like eyes, brain, spine, vertebrae, etc. Tuberculosis may be contracted by the dental health care worker from an actively infectious patient i.e sputum positive.

**Oral Manifestation [15]:**

- Tuberculous Ulcer of the tongue.
- Ulcer of the buccal mucosa
- Gingival enlargement

**Prevention and Management**

1. History of adequate treatment (ATT/ DOTS)
2. Family history
3. Signs or symptoms of relapse seen- Culture/ AFB sputum or GCF/ Tuberculin test/ Chest X-Ray done.
4. In emergency cases, aerosol generation to be avoided.
5. **Caveat**: Many patients with infectious disease cannot be identified by history or examination; therefore, all patients should be approached with the use of standard precautions.
6. Treatment to be done with proper isolation, sterilization, mask, gloves, gown, and ventilation.

**Hepatitis**

The term "viral hepatitis" is usually applied to the acute stage of the disease which is characterized by fever, malaise, and jaundice, but seldom causes death. Chronic manifestations of the disease are classified either as chronic hepatitis or massive liver necrosis. In mild forms of the disease, the patient has flu-like symptoms of nausea and vomiting and a smoker may develop distaste for cigarettes. The patient may have arthritis or rash involving distal joints [16].

**Prevention and management:**

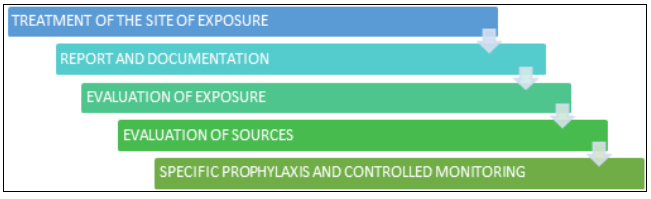
Each dental health care facility should develop a comprehensive written program for preventing and managing occupational exposures. This should focus on the following:

- Dental health care provider should receive three doses of hepatitis B vaccination
- Describe the type of blood exposures that may place dental health care personnel (DHCP) at risk of infection.
- Outline the procedures for promptly reporting and evaluating such exposures
- Identify the health care professional who is qualified to provide counseling and perform all medical evaluations and procedures in accordance with the most current US Public Health Care Service (CDC) recommendations
- Resource should be available that permits rapid access of exposed DHCP to clinical care, testing, counseling, and post-exposure prophylaxis (PEP) and the testing and counseling of source patients [17].

The following are the guidelines for treating hepatitis patients

- No dental treatment other than urgent care should be rendered for a patient with acute viral hepatitis [19].
- Hepatitis B is of primary concern to the dentist. Individuals still carry the virus up to 3 months after the symptoms have disappeared, so any patient with a recent history of hepatitis B should be treated for dental emergency problems only [18].
- For patient with a past history of hepatitis, consult the physician to determine the type of hepatitis, course and length of the disease, mode of transmission, and any chronic liver disease or viral carrier state
- For recovered HAV or HEV, perform routine periodontal care
- For recovered HBV and HDV, consult with the physician and order HBsAg and HBs laboratory tests.
- If HBsAg and anti-HBs tests are negative but HBV is suspected, order another HBs determination
- Patients who are HBsAg positive are probably infective (chronic carriers); the degree of infectivity is measured by an HBsAg determination
- Patients who are anti-HBs positive may be treated routinely.
- Patients who are HBsAg negative may be treated routinely.

**Post-exposure prophylaxis:**



| Vaccination and antibody response, status of exposed workers | Source HBsAg positive | Treatment Source HBs Ag+ negative | Source unknown or not available for testing |
|---|---|---|---|
| Unvaccinated | HBIG *1 and initiate hepatitis B vaccine series | Initiate HB vaccine series | Initiate hepatitis B vaccine series |
| Previously vaccinated Known responders Known nonresponders | No treatment HBIG *1 and initiate revaccination or HBIG *2 | No treatment No treatment | No treatment If known high- risk source, treat as source was HBsAg positive |
| Antibody response unknown | Test exposed person for anti- HBs If adequate, no treatment is necessary If inadequate, administer HBIG* 1 and vaccine booster | No treatment | Test exposed person for anti- HBs If adequate, no treatment is necessary If inadequate, administer vaccine booster and recheck titre in 1-2 months |

CDC guidelines for post-exposure prophylaxis for hepatitis B virus 60

**Alcohol Liver Disease**

Impaired synthesis of vitamin K and other clotting factors which makes the patient prone to bleeding tendency in unpredictable drug metabolism.

**Oral manifestations:**

- Impaired healing
- Candidiasis
- Xerostomia
- Glossitis
- Oral Cancer
- Angular Cheilosis
- Petechiae
- Ecchymoses

**Precautions and management:**

- Minimise use of drugs metabolised in the liver
- Fresh frozen plasma/ Vitamin K/ Platelets Transfusion during surgery should be administered when required [20].

**Chronic Liver Disease**

Chronic kidney diseases are results of progressive deterioration of kidney nephrons and dysfunction of glomerular filtration. With chronic renal deficiency we should pay attention to the following:

- The immune system of patients is grossly weakened, and consequently, there is greater tendency to infection.
- Absorption of medications administered per os is reduced due to reduced absorption capacity of the gastrointestinal tract.
- Forms of B and C hepatitis are frequent, and as a result, there is a tendency to bleeding.
- Anemia is a result of the reduced erythropoietin production [20].
- Tendency to bleeding is increased because of platelets dysfunction [20].
- There is also a tendency to hypertension and hypotension. Pre-operative and intra-operative tension is quite common in patients with chronic renal disease [21].
- In patients with more severe renal disease there changes appear on paradontium [21].
- Secondary hyperparatireoidism is also very common.
- Acid- base disorders. Acidosis in patients with chronic renal disease may reduce the eff ectiveness of local anesthetics [20, 22].
- Hyperalcemia. General anaestitic is to be avoided in patients with chronic renal disease whose potassium level is over □.□ mmol/l. Otherwise, there is an increased risk of aritmia [20].

There are two possible therapies for patients with kidney dysfunction:

- Dialysis (hemodialysis, peritoneal dialysis)
- Kidney transplants

**Management of patients with dialysis:**

The tooth extraction should be done a day after dialysis when the anticoagulant agent's presence is reduced to the minimum while the dialysis effect is maximal. APTT and INR should be checked prior to the surgical intervention [23].

**Diabetes Mellitus**

DM is caused by an underproduction of insulin, a resistance of insulin receptors in end organs to the effects of insulin, or both. Diabetes is commonly divided into insulin-dependent (type 1) and non–insulin-dependent (type 2) diabetes.

**Oral manifestation in diabetes [24]:**

- Speckled leukoplakia left buccal mucosa
- Fissured and dry tongue
- Denture stomatitis
- Dental caries
- Hyposalivation predisposes to chapped lips and angular cheilitis
- Erythematous candidiasis of hard palate
- Pseudomembranous candidiasis
- Generalised periodontitis & multiple abscesses
- Lichen planus

**Prevention and management:**

- A careful clinical history and clinical finding ios the key factor for management of these patients.
- Screening blood glucose level/ hba1c is necessary before starting ay dental procedure
- monitoring and control of hyperglycemia is also important
- For patients receiving insulin (or sulfonylurea drugs), insulin reaction is prevented by the following methods:

1. Eating normal meals before appointments.
2. Scheduling appointments in morning or midmorning.
3. Having sugar available in some form in cases of insulin reaction.

- Defer orthodontic and prosthodontic care until periodontal disease is well controlled.
- Orthodontic light forces can be applied in controlled glycemic status [25].
- Avoid periodontal or oral surgery if poor glycemic control.

**Thyroid disorder**

An estimated 15% of the general population has abnormalities of thyroid anatomy on physical examination, and an unknown percentage of these do not complete a diagnostic evaluation. It has been suggested that the number of people affected may be twice as many as the undetected cases [26]. This means patients with undiagnosed hypothyroidism or hyperthyroidism are seen in the dental chair, where routine treatment has the potential to result in adverse outcomes [27].

**Common oral manifestations of patients with thyroid gland disorders**

| Hypothyroidism | Hyperthyroidism |
|---|---|
| • Salivary gland enlargement<br>• Compromised periodontal health - delayed bone resorption<br>• Macroglossia<br>• Glossitis<br>• Dysgeusia<br>• Delayed dental eruption<br>• Enamel hypoplasia in both dentitions, (being less intense in the permanent dentition)<br>• Anterior open bite<br>• Micrognathia<br>• Thick lips<br>• Mouth breathing | • Increased susceptibility to caries<br>• Increased susceptibility to periodontal disease<br>• Enlargement of extraglandular thyroid tissue<br>• Burning mouth syndrome<br>• Accelerated dental eruption<br>• Maxillary and mandibular osteoporosis<br>• Development of connective tissue diseases like Sjogren's syndrome or Systemic lupus erythematosus |

**Prevention and management of hyperthyroidism**

Increased levels of anxiety, and stress or surgery can trigger a thyrotoxic crisis.

Epinephrine is contraindicated, and elective dental care should be deferred.

Aspirin; oral contraceptives; estrogen; and nonsteroidal antiinflammatory drugs, or NSAIDs, may decrease the binding of T4 to TBG in plasma. This increases the 195 amount of circulating T4 and can lead to thyrotoxicosis.

**Prevention and management of hypothyroidism**

Recognition of initial stage of hypothyroid (myxedema) coma:

- Hypothermia
- Bradycardia
- Hypotension
- Epileptic seizures

Initiation of immediate treatment:

- Seek immediate medical aid.
- Administer hydrocortisone (100-300 mg).
- Provide CPR as indicated

**Adrenal Insufficiency**

Cortisol, a glucocorticoid produced by adrenal cortex is essential for the human body to survive in stressful situations. The deficiency of cortisol in the human body leads to adrenal insufficiency which in turn can compromise the individual's ability to adapt to a stressful situation, such as a dental appointment.

**Prevention:**

- Discontinue drugs that decrease cortisol levels (e.g. ketoconazole) at least 24 hours before surgery with consent of the patient's physician.
- Give 100-150 mg/day of hydrocortisone at beginning of major oral surgery or procedures involving general anesthesia; continue for 2-3 days.
- Monitor BP intra- operative and initial postoperative phase.
- Provide good pain control.

**Bleeding disorder**

Hemophilia is an X-linked hereditary disorder. Hemophilia A is a deficiency of factor VIII and hemophilia B (Christmas disease) is a deficiency of factor IX. Hemophilia is considered severe when plasma activity is <1 IU/dL (normal range 50-100); moderate if it ranges between 2 and 5 IU/Dl, and mild if it is between 6 and 40 IU/Dl [28].

**Oral manifestations:**

- Spontaneous bleeding/ prolonged bleeding after dental procedures that injure soft tissue or bone
- Hematomas and hemarthrosis
- Higher risk of viral infection due to multiple transfusion

**Prevention and Management [29]:**

**History**—bleeding problems in relatives, excessive bleeding after trauma or surgery

**Screening tests**—

- Prothrombin time (normal)
- Activated partial thromboplastin time (prolonged)
- Thrombin time (normal)
- Platelet count (normal)

**Replacement options include the following:**

- Cryoprecipitate (used rarely)
- Fresh frozen plasma (used rarely)
- Factor VIII concentrates

For factor VIII deficiency, consider using:

1. Vasopressin (desmopressin) (oral or nasal)
2. Tranexamic acid injectable, tablets, mouth-rinse
3. Factor VIII replacement for some cases

- Local measures (e.g. splints, thrombin, microfibrillar collagen) for control of bleeding.
- Rubber-band extractions, atraumatic dental treatment, limited mouth opening (hemarthrosis)
- Aspirin/other NSAIDs, aspirin-containing compounds should be avoided.

**Leukemia**

Leukemia is a malignant disease of the blood, where the uncontrolled proliferation of immature blood cells that originate from hematopoietic stem cell mutation occurs. Eventually these aberrant cells compete with normal cells for space in the bone marrow, causing bone marrow failure and death [30].

**Classification [30]:**

The most common leukemias are generally classified as:

1. Acute lymphocytic
2. Acute myeloid
3. Chronic lymphocytic
4. Chronic myeloid.

**Oral Manifestations [31]:**

- Gingival swelling/ enlargement
- Mucosal or gingival bleeding
- Oral infection
- Xerostomia, trismus, osteonecrosis, and oral mucositis, in up to 80% of people receiving hematopoietic cell transplantation.

**Management:**

Little *et al.* [32] and Elad *et al.* [33] reinforce that the role of the dentist should occur at three different moments:

1. pre-antineoplastic treatment evaluation and preparation of patients for this
2. guidelines and oral health care during treatment
3. posttreatment care.

**Pre-neoplastic oral health care:**
The dental examination, if possible, should occur immediately after diagnosis and before initiation of chemotherapy so as to permit the removal of sources of infection of dental origin [34, 35, 36, 37, 38], since expected neutropenia during chemotherapy predisposes patients to the spread of infection [39].

**Guidelines and oral health care during treatment:**
Apart from oral mucositis, the main oral complication of chemotherapy, other changes may occur, such as bleeding, increased rates of caries, infections (bacterial, viral, or fungal), gingival abscesses, recurrent herpetic stomatitis, candidiasis, salivary gland dysfunction, xerostomia, dysgeusia, and pain [38]. It is important to realize that infections in the oral cavity can progress to systemic infections, worsening the health status of the patient, and the presence of a dentist and/or stomatologist provides important support to the medical staff [40].

**Human Immunodeficiency Virus**
Human immunodeficiency virus (HIV) disease is a syndrome resulting from the acquired deficiency of cellular immunity caused by a complex family of lentiviruses. These are composed of 2 sub types HIV-1 and HIV-2. HIV infection is characterized by the reduction of the Helper T-lymphocytes in the peripheral blood and the lymph nodes. (ICD 9 code 042).

**Oral manifestations of disease [41]:**
- Candidiasis of the oral mucosa (most common oral manifestation) * Pseudomembranous type is most common, followed by atrophic/erythematous type and angular cheilitis
- Aphthous lesions
- HIV-associated periodontal diseases * Linear gingival erythema * Necrotizing ulcerative gingivitis (NUG) and Necrotizing Ulcerative Periodontitis (NUP)
- Viral Infection: Herpes Virus Family – HSV, CMV, EBV, VZV, and Human Papilloma Virus lesions • Aphthous ulcerations
- Hairy leukoplakia (primarily on the lateral border of the tongue but can involve other areas)
- Salivary gland enlargement and decreased salivary gland function
- Kaposi's sarcoma
- Intraoral, head and neck lymphomas
- Increased caries risk with xerostomia that can be heightened by the use of sugar containing medicines

**Dental treatment and prevention:**
Consult with patient's physician to establish current level of immunocompromise and acceptable procedures specific to treatment plan
- Rule out significant risk for infection due to immunosuppression associated with neutropenia by obtaining blood values from a current CBC with Differential. Look specifically for ANC (absolute neutrophil count) prior to treatment. ANC<1000/$mm^3$ indicates a significant increase of risk for infection and the need for consideration of prophylactic antibiotics for any dental treatment that potentially can cause bacteremia or put the patient at risk for aspiration pneumonia.
- Rule out risk for excessive/prolonged bleeding.
- Document history of any opportunistic infections.
- Determine the current CD4+ lymphocyte count as this will indicate the current level of immunosuppression.
- Patients with neutropenia, in particular, are prone to infection and consideration for antibiotic prophylaxis may be indicated for procedures that place the patient at risk for infection.
- Obtain a complete list of the patient's medications including non-prescription agents and supplements.
- As needed for patients with xerostomia: * Educate on proper oral hygiene (brushing, flossing) and nutrition. * Recommend brushing teeth with a fluoride containing dentifrice before bedtime. After brushing, apply neutral 1.1% fluoride gel (e.g., Prevident 5000 gel) in trays or by brush for 2 minutes. Instruct patient to spit out excess gel and NOT to rinse with water, eat or drink before going to bed. * Recommend xylitol mints, lozenges, and/or gum to stimulate saliva production and caries resistance.

**Pregnancy**
The storm of hormones which is induced during pregnancy causes changes in the mother's body and the oral cavity is no exception. Therefore, understanding the physiologic changes of the body and the effects of the dental radiation and the medications which are used in dentistry for the pregnant women, lactating mothers and the foetuses, is essential for the management of the pregnant and nursing mothers [46].

**Current Recommendations During 1st Trimester [42]:**
1. To educate the patients about the maternal oral changes which occur during pregnancy.
2. To emphasize strict oral hygiene instructions and thereby, plaque control.
3. To limit the dental treatment to a periodontal prophylaxis and emergency treatments only.
4. To avoid routine radiographs. They should be used selectively and only whenever they are needed.

**Current recommendations during 2nd trimester [42]:**
1. Oral hygiene, instructions and plaque control.
2. Scaling, polishing and curettage may be performed if they are necessary.
3. The control of active oral diseases, if any.
4. An elective dental care is safe
5. Avoid routine radiographs. Use selectively and when they are needed.

**Current recommendations during 3rd trimester [43]:**
1. Oral hygiene, instructions and plaque control.
2. Scaling, polishing and curettage may be performed if they are necessary.
3. Avoid an elective dental care during the 2nd half of the third trimester.
4. Avoid routine radiographs. Use selectively and when they are needed.

**COVID-19**
Considering the generation of high amounts of droplets and aerosols during routine dental procedures, the conventional protective measures that are routinely followed by dental clinicians are no longer efficient for prevention of

COVID-19 transmission [44, 45, 46]. Thus, the precautions need to be taken seriously not only during the management period and the disease peak, but also during the remission period in order to prevent reinfection [47].

Dental treatment should be limited to patients with urgent or emergency situation. By screening questionnaires for COVID-19, patients are divided into three groups of (a) apparently healthy, (b) suspected for COVID-19, and (c) confirmed for COVID-19. Separate waiting and operating rooms should be assigned to each group of patients to minimize the risk of disease transmission. All groups should be treated with the same protective measures with regard to PPE for the dental clinicians and staff [44].

## Conclusion

Dentistry is most outstandingly and foremost a healing vocation. Today it has become very crucial to adapt holistic approach in every aspect of our lives including dentistry. Eventually, one gets the best and pocket-friendly quality treatment [48]. Being an oral specialist had a great amount of knowledge and practices towards the general health [49]. A public health approach should be adopted though promoting preventive measures by proper communicative and educational methods [52], The moral obligations of the doctors is to act in the patient's best interest, so everyone has to work together as team towards the therapeutic approach [50]. Though it is very important to have a thorough understanding of the patient's medical history and how to manage their dental care. Thereby focusing more on creating awareness, precaution, promotion and preventing medical emergencies and complications.

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