

**Dental Management of the Medically Compromised Patients****Medical history**

A medical history must be taken for every patient who is to receive dental treatment. There are two basic techniques were used to obtain a medical history. The first technique consists of an interview of the patient, in which the interviewer questions the patient and then records a narrative of the patient's verbal responses on a form sheet.

The second technique was used a printed questionnaire that the patient fills out.

**1. Cardiovascular Disease**

Patients with cardiovascular disease are especially vulnerable to physical or emotional challenges that may be encountered during dental treatment.

**2. Heart failure** results from an underlying cardiovascular problem such as coronary heart disease or hypertension. Patients with untreated or symptomatic heart failure are at increased risk for myocardial infarction (MI), arrhythmias, acute heart failure, or sudden death, and generally are not candidates for elective dental treatment. Chair position may influence ability to breathe, with some patients unable to tolerate a supine position. Vasoconstrictors should be avoided, if possible, in patients taking digitalis glycosides (digoxin) because the combination can precipitate arrhythmias.

**3. Heart Attack**

A history of a heart attack (myocardial infarction) within the very recent past may prevent elective dental care, because during the immediate post infarction period, patients are at increased risk for reinfarctions, arrhythmias, and heart failure. Patients may be taking medications such as antianginals, anticoagulants, adrenergic blocking agents, calcium channel blockers, antiarrhythmic agents, or digitalis. Some of these drugs may alter the dental management of patients because of potential interactions with vasoconstrictors in the local anesthetic, adverse side effects, or other Considerations. Stress and anxiety reduction measures may be advisable.

**4. Angina Pectoris**

is a brief substernal pain results from myocardial ischemia, commonly provoked by physical activity or emotional stress, is a common and significant symptom of coronary heart disease. Patients with angina, especially unstable or severe angina, are at increased risk for

arrhythmias, MI, and sudden death. A variety of vasoactive medications, such as nitroglycerin,  $\beta$ -adrenergic blocking agents, and calcium channel blockers, are used to treat angina. Caution is advised with the use of vasoconstrictors. Stress and anxiety reduction measures may be appropriate. Patients with unstable or progressive angina are not candidates for elective dental care.

### **5. High Blood Pressure**

Patients with hypertension (blood pressure greater than 140/90 mm Hg) should be identified by history and the diagnosis confirmed by blood pressure measurement. Patients with a history of hypertension should be asked if they are taking or are supposed to be taking antihypertensive medication. Failure to take medication often is the cause of elevated blood pressure in a patient who reports being under treatment for hypertension. Current blood pressure readings and any clinical signs and symptoms that may be associated with severe, uncontrolled hypertension, such as visual changes, dizziness, spontaneous nosebleeds, and headaches, should be noted.

Some antihypertensive medications, such as the nonselective  $\beta$ -adrenergic blocking agents, may require caution in the use of vasoconstrictors. The coadministration of calcium channel blockers with macrolide antibiotics (e.g., erythromycin, clarithromycin) can result in excessive hypotension. Stress and anxiety reduction measures also may be appropriate. Elective dental care should be postponed for patients with severe, uncontrolled hypertension (blood pressure of 180/110 mm Hg or higher) until the condition can be brought under control.

### **6. Artificial Heart Valve**

A diseased valve may be replaced with artificial or prosthetic valves. Such replacement valves are associated with a high risk for development of infective endocarditis, with significant morbidity and mortality. Accordingly, the AHA recommends that all patients with a prosthetic heart valve be given prophylactic antibiotics before most dental procedures. Patients with an artificial heart valve also may be on anticoagulant medication to prevent blood clots associated with the valve. In such patients, excessive bleeding may be encountered with surgical procedures; it is therefore necessary to determine the level of anticoagulation before any invasive procedure.

### **7. Hemophilia or inherited bleeding disorder**

Patients with an inherited bleeding disorder such as hemophilia A or B, or von Willebrand's disease, are at risk for severe bleeding after any type of dental treatment that causes bleeding, including scaling and root planing. These patients must be identified and managed in cooperation with their physician or haematologist. Patients with severe factor deficiency may require factor replacement before invasive treatment, as well as aggressive postoperative measures to maintain hemostasis.

**8. Blood Transfusion**

Patients with a history of blood transfusions are of concern from two aspects. The underlying problem that necessitated a blood transfusion, such as an inherited or acquired bleeding disorder, must be identified, and alterations in the delivery of dental treatment may have to be made. These patients also may be carriers of hepatitis B or C or may have become infected with the human immunodeficiency virus (HIV) and must be identified. Laboratory screening or medical consultation may be appropriate to determine the status of liver function, and, as always, standard infection control procedures are mandatory.

**9. Anemia**

A significant reduction in the oxygen-carrying capacity of the red blood cells may result from an underlying pathologic process such as acute or chronic blood loss, decreased production of red blood cells, or haemolysis. Some anaemias, such as glucose-6-phosphate dehydrogenase (G6PD) deficiency and sickle cell disease, require dental management modifications. Oral lesions, infections, delayed wound healing, and adverse responses to hypoxia all are potential matters of concern

**10. Leukemia/Lymphoma**

Depending on the type of leukemia or lymphoma, status of the disease, and type of treatment, some patients may have bleeding problems or delayed healing, or may be prone to infection. Gingival enlargement can be a sign of leukemia. Some adverse effects can result from the use of chemotherapeutic agents and may require dental management modifications.

**11. Epilepsy, Seizures, and Convulsions**

A history of epilepsy should be identified, and the degree of seizure control should be determined. Specific triggers of seizures (e.g., odors, bright lights) should be identified and avoided. Some medications used to control seizures may affect dental treatment because of drug actions or adverse side effects. For example, gingival over growth is a well-recognized adverse effect of diphenylhydantoin (Dilantin). Patients may discontinue the use of anticonvulsant medication without their doctor's knowledge and thus may be susceptible to seizures during dental treatment. Therefore, verification of patients' adherence to their medication schedule is important.

**12. Psychiatric Patients**

Patients with a history of a behavioral disorder or psychiatric illness as well as the nature of the problem need to be identified. This information may help explain patients' unusual such as unexplainable or unusual conditions. Additionally, some psychiatric drugs have the potential to interact adversely with vasoconstrictors in local anesthetics. They also may produce adverse oral effects such as hyposalivation or xerostomia.

Some patients may be excessively anxious or apprehensive about dental treatment, requiring stress reduction measures.

### **13. Stomach or Intestinal Ulcers, Gastritis, and Colitis**

Patients with gastric or intestinal disease should not be given drugs that are directly irritating to the gastrointestinal tract, such as aspirin or nonsteroidal antiinflammatory drugs. Patients with colitis or a history of colitis may not be able to take certain antibiotics. Many antibiotics can cause a particularly severe form of colitis (i.e., pseudomembranous colitis), and elderly persons are more susceptible to this condition. Some drugs used to treat gastric or duodenal ulcers may cause dry mouth.

### **14. Hepatitis, Liver Disease, Jaundice, and Cirrhosis**

Patients who have a history of viral hepatitis are of concern in dentistry because they may be asymptomatic carriers of the disease and can transmit it unknowingly to dental personnel or other patients. Of the several types of viral hepatitis, only hepatitis B, C, and D have carrier stages. The laboratory tests are available to identify affected patients. Standard infection control measures are mandatory. Patients also may have chronic hepatitis (B or C) or cirrhosis, with associated impairment of liver function may result in bleeding and less efficient metabolism of certain drugs, including local anesthetics and analgesics.

### **15. Allergies or Hives**

Patients may be allergic to some drugs or materials used in dentistry. Common drug allergens include antibiotics and analgesics. Latex allergy also is common, and in patients so affected, alternative materials such as vinyl or powderless gloves and vinyl dam material can be used to prevent an adverse reaction. True allergy to amide local anesthetics is uncommon. Dentists should procure a history regarding allergy by specifically asking patients how they react to a particular substance. Symptoms and signs with allergy include itching, urticaria (hives), rash, swelling, wheezing, angioedema, runny nose, and tearing eyes. Isolated signs and symptoms such as nausea, vomiting, heart palpitations, and fainting generally are not of an allergic origin but rather are manifestations of drug intolerance, adverse side effects, or psychogenic reactions.

### **16. Asthma**

The type of asthma should be identified, as should the drugs taken and any precipitating factors or triggers. Stress may be a precipitating factor and should be minimized when possible. It often is helpful to ask whether the patient has visited the emergency room for acute treatment of asthma, because this historical detail would indicate more severe disease. A patient who uses an albuterol inhaler for treatment of acute attacks should be instructed to bring it to the dental appointment.

**17. Diabetes**

Patients with diabetes mellitus must be identified to determine the type of diabetes, how it is being treated, and how well controlled it is. Patients with type 1 diabetes require insulin, whereas type 2 diabetes usually is controlled through diet and/or oral hypoglycaemic agents; however, some patients with type 2 diabetes eventually also require insulin. Those with type 1 diabetes have a greater number of complications and are of greater concern regarding management than are those with type 2 diabetes. Symptoms and signs of diabetes include excessive thirst and hunger, frequent urination, weight loss, and frequent infections. Long-term complications include blindness, hypertension, and kidney failure, each of which also may affect dental management. Patients with diabetes typically do not handle infection very well and also may have exaggerated periodontal disease. Patients who take insulin are at risk for episodes of hypoglycaemia in the dental office if meals are skipped or if infection is present.

**18. Thyroid Disease**

Patients with uncontrolled hyperthyroidism are potentially hypersensitive to stress and  $\alpha_1$ -adrenergic effects of sympathomimetic, so the use of vasoconstrictors generally is contraindicated. In rare cases, infection or surgery can initiate a thyroid crisis—a serious medical emergency. These patients also may be easily upset emotionally and intolerant of heat, and they may exhibit tremors. Exophthalmos may be present. Patients with known hypothyroidism usually are taking a thyroid supplement; this medication regimen generally warrants no concern so long as the thyroid hormone level does not become too high.

**19. Kidney Failure**

Patients with chronic kidney disease or a kidney transplant must be identified. The potential for abnormal drug metabolism, immunosuppressive drug therapy, bleeding problems, hepatitis, infection, high blood pressure, and heart failure must be considered in management. Certain drugs that are nephrotoxic should be avoided. Patients on hemodialysis do not require antibiotic prophylaxis.

**20. Sexually Transmitted Diseases**

A variety of sexually transmitted diseases such as syphilis, gonorrhea, human immunodeficiency virus (HIV) infection, as well as AIDS, can have manifestations in the oral cavity because of oral genital contact or secondary to hematogenous dissemination in the blood or immune suppression. The dentist may be the first to identify these conditions. In addition, some sexually transmitted diseases, including HIV infection, hepatitis B and C, and syphilis, can be transmitted to the dentist through direct contact with oral lesions or infectious blood.

**21. Tobacco and Alcohol Use**

The use of tobacco products is a risk factor that is associated with cancer, cardiovascular disease, pulmonary disease, and periodontal disease. Excessive use of alcohol is a risk factor for malignancy and heart disease, and may lead to liver disease. The combination of excessive alcohol and tobacco use is a significant risk factor for oral cancer.

**22. Drug Addiction and Substance Abuse**

Patients who have a history of intravenous drug use are at increased risk for infectious diseases such as hepatitis B or C, AIDS, and infective endocarditis. Narcotic and sedative medications should be prescribed with caution, if at all, for these patients, because of the risk of triggering a relapse. This caveat also applies to patients who are recovering alcoholics. Vasoconstrictors should be avoided in patients who are cocaine or methamphetamine users because the combination may precipitate arrhythmias or severe hypertension.

**23. Tumors and Cancer**

Patients who have had cancer are at risk for recurrence, so they should be closely monitored. Also, cancer treatment regimens including chemotherapeutic agents or radiation therapy may result in infection, gingival bleeding, oral ulcerations, dry mouth, mucositis, and impaired healing after invasive dental treatment, all of which represent significant management considerations. Patients with a history of intravenous bisphosphonate therapy for metastatic bone disease are at risk for osteonecrosis of the jaw, and surgical treatment should be managed cautiously.

**24. Radiation Therapy and Chemotherapy**

Patients with previous radiation treatment to the head, neck, or jaw must be carefully evaluated, because radiation can permanently destroy the blood supply to the jaws, leading to osteoradionecrosis after extraction or trauma. Irradiation of the head and neck can destroy the salivary glands, resulting in decreased saliva, increased dental caries, and mucositis. Fibrosis of masticatory muscles resulting in limited mouth opening also may occur. Chemotherapy can produce many undesirable adverse effects, most commonly a severe mucositis; however, such changes resolve with cessation of the chemotherapeutic agents.

**25. Steroids**

Cortisone and prednisone are examples of corticosteroids that are used in the treatment of many diseases. These drugs are important because their use can result in adrenal insufficiency and potentially render the patient unable to mount an adequate response to the stress of an infection or invasive dental procedure such as extractions or periodontal surgery. Generally, however, most routine dental procedures do not require administration of supplemental steroids.

**26. Pregnancy**

Women who are or may be pregnant may need special consideration in dental management. Caution typically is warranted in the taking of radiographs, administration of drugs, and timing of dental treatment. Prolonged time in the dental chair should be avoided, to prevent the complication of supine hypotension. If supine hypotension develops, rolling the patient onto her left side affords return of circulation to the heart. Good dental hygiene is important to maintain during pregnancy. Preventive plaque control measures should be provided in the first trimester. Extensive reconstruction or significant surgical procedures are best postponed until after delivery. In spite of the safety of dental radiography, ionizing radiation should be avoided. The most important for the pregnant patient are the protective lead apron and the thyroid collar. In addition, the use of digital radiography markedly reduces radiation exposure.

**References:**

1. Dental Management of the Medically Compromised Patient ISBN: 978-0-323-08028-6 Copyright © 2013 by Mosby, an imprint of Elsevier Inc. Library of Congress Cataloging-in-Publication Data
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