

# Review Article

## Oral Health Management of Geriatric Patients with Systemic Disorders

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### Abstract

There is an increased demand for skilled professionals to treat the geriatric community who are more prone to various systemic disorders. Dentist apart from treating the oral cavity should be aware of various complications of the systemic disorders and dental management in emergencies. They should also know how these systemic disorders affect the oral cavity and about the various drug interactions. This article briefly explains the oral health management of geriatric patients with some common systemic disorders in this article.

**Key Words:** Oral health care, Geriatric dentistry, Systemic disorders, General health, Dental management

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### Introduction

Oral health care is an integral part of general healthcare management in elderly patients. India currently ranks fourth among countries of the world in the size of aged population is approximately 77 million. The life expectancy of an Indian has increased to 62.36 years for males and 63.39 yrs for females compared with 23.8 years for both in 1901<sup>1</sup>. The studies have concluded the need for exclusive geriatric oral healthcare management clinics in India to meet the requirements of the elderly patients. Geriatric patients affected by systemic disorders show oral symptoms which the dentist should have a thorough knowledge of for proper diagnosis and management (Table 1). Improving the oral health will significantly enhance the physical, social & mental well being of the geriatric adults. This review is about the dental management of geriatric adults with various systemic disorders.

**Table 1 - Leading chronic conditions in adults aged 65yrs and older<sup>2</sup>:**

Rank	Chronic conditions	Rate/1000 persons
1	Arthritis	502
2	Hypertension	364
3	Heart disease	324
4	Chronic sinusitis	151
5	Diabetes Mellitus	101
6	Allergic Rhinitis	80
7	Mental Disorders	64

### Systemic conditions & its Oral consideration in elderly adults:

#### Arthritis

It is a form of joint disorder that involves inflammation of one or more joints. The prevalence in Indian population as reported by Mahajan et al 2003 is around 23.9%<sup>3</sup>. Most of the medications for rheumatic disorders may have side effects including dry mouth, mouth sores, nausea & anaemia.

Patients with rheumatoid arthritis may have restricted manual dexterity resulting in compromised oral hygiene maintenance. Electric toothbrushes or specially modified brushes (bigger handles, friction) are preferred for easier grip and usage.

Short appointments in the morning or early afternoon are preferred. Small neck pillow may need to be repositioned throughout appointment and a rolled towel for lumbar support. Antibiotic prophylaxis and corticosteroid therapy should be considered before invasive dental treatments in arthritis patients.

Infections of the prosthetic joints are usually caused by non oral microorganisms like staphylococci and infections of oral origin are reported rarely. Thus there is no reliable evidence on antibiotic prophylaxis before dental procedure in patients with prosthetic joints<sup>4</sup>.

American Dental Association along with American orthopaedic surgeons recommend antibiotic prophylaxis in following circumstances of patients who received new joints within last two years, previously infected joints, immunocompromised adult's respectively<sup>5</sup>.

## Diabetes

The International Diabetes Federation (IDF) estimates the total number of people in India with diabetes to be around 50.8 million in 2010 rising to 87.0 million by 2030<sup>6</sup>.

Studies have shown that diabetes is one of endocrine diseases that influence oral health of patients. Hyperglycemia results in changes in microflora, disturbances in healing process resulting in frequent infection. Other symptoms include hyposalivation, changes in salivary composition, decreased immune function respectively. The most common oral manifestations in diabetic patients include xerostomia, increased plaque and calculus, candidiasis, periodontitis, periapical abscess and burning mouth syndrome which can influence the quality of life of diabetic patients<sup>7,8</sup>.

Studies indicate diabetic patients did not show acceptable oral health status and to some extent, oral problems affected oral health related quality of life<sup>9</sup>.

One of the problems associated with treating diabetic patients is, hypoglycaemia as dental disease and treatment may disrupt the normal pattern of food intake. The dentist can avoid this by administering oral glucose just before the treatment if the patient has taken his medication but skipped the meal<sup>10</sup>.

Diabetic patients are usually immune compromised and hence dentists have to treat them with specific antibiotics. Amoxicillin and NSAID's can be used safely. Tetracyclines and Corticosteroids should be avoided since they disturb diabetic control.

Geriatric patients with well controlled diabetes usually tolerate routine dental procedures. Insulin dependent patients can undergo minor surgical procedures within 2 hours of eating breakfast and receiving their morning insulin injection. Patients with uncontrolled diabetes and those who need invasive procedures should be referred to an oral surgeon after consultation with his physician<sup>11,12</sup>.

## Hypertension

Blood Pressure is variable and there is a circadian rhythm. It is lowest during the night and high when the patient is anxious. It increases with age. A blood pressure of under 140/90 mm Hg is considered normal. Patients with blood pressure consistently above 160/90 mm Hg are defined as Hypertensive and should take extra care during dental treatment since they have increased risk of bleeding, stroke, heart failure and myocardial infarction.

Almost 50% of the hypertensive patients are uncontrolled and many are undiagnosed<sup>13</sup>. Hence all the geriatric patients attending the dental clinic has to be checked for hypertension.

It is important to treat a patient with hypertension without anxiety and pain. The BP should be controlled before the dentist begins elective dental treatment.

If the patient has a persistently high BP, the patient

should be referred to his physician before further dental treatment. While treatment if the patient's BP increases, the dentist should discontinue the treatment and place the patient at rest in supine position. The BP is rechecked after 5 min, if it still is high dentist should call the physician for assistance<sup>14</sup>.

## Heart Disease

Ischaemic heart disease is common in the general population and frequently occurs in dental office. Most patients will have either angina or myocardial infarction. Angina affects around 1% population, the prevalence increasing with age. It is usually caused by coronary artery disease and angina pain is precipitated when there is inadequate supply of oxygen.

Geriatric patients with history of heart disease should be treated after getting opinion from his cardiologist. The patient should take their daily dosage of medicines on the day of dental procedure and should get the medications to the dental office. Patients with cardiac history are treated better in late morning or early afternoon appointments since cardiac events are more commonly occurring early in the morning<sup>15</sup>.

Stress reduction protocol should be followed with good analgesia and controlling the dosage of adrenalin in LA to 0.036mg (2 carpules of LA with 1,00,000 epinephrine)<sup>16</sup>.

If the patient experiences an angina attack in the chair, the treatment should be stopped and sub lingual glyceryl nitrate tablet should be administered. Adjunctive oxygen therapy may be used. After the attack has passed it will normally be safe to continue dental treatment if the patient wishes<sup>17</sup>.

Prolonged chest pain may suggest myocardial infarction. The pain experienced during myocardial infarction is usually severe and not relieved by GTN. Patient may be feeling cold, clammy, nauseous and frightened. This is a medical emergency and immediately ambulance should be called. The first line of drug should be 300mg of aspirin. Oxygen is helpful, and if possible the practitioner can gain a venous access<sup>17</sup>.

In patients with valvular disorders, the two main concern during dental treatment are:

1. Risk of infective endocarditis
2. Risk of bleeding due to anticoagulants

The risk of endocarditis is more likely to occur in patients after dental treatment who have previous endocarditis and those with cardiac lesions. The risk for patients with prosthetic valve is about 2% per annum for aortic valve replacement and 0.5% per annum for mitral valve replacement.

American Heart Association's Endocarditis committee recommends antibiotic prophylaxis only for highest risk of adverse outcomes for endocarditis including Prosthetic cardiac valve, previous endocarditis, certain congenital heart disease and cardiac transplantation recipient<sup>17</sup>.

**Antibiotic Prophylaxis Regimen:** 2g of oral amoxicillin / 1g of cefazolin IM or IV / Clindamycin 600mg 30 min prior to procedure

**The risk of Bleeding:** Patients with native valve disease can often stop or reduce their anti coagulants, but those with prosthetic valves should not discontinue their regimen without consulting their cardiologist.

**Anticoagulants Therapy:** Apart from Warfarin and aspirin other anti-platelet drugs like persantin, clopidogrel are commonly prescribed for many cardiac disorders. During dental procedures an INR targets of 2.5 is sufficient to continue dental treatment without stopping anti coagulant therapy<sup>18</sup>.

Blood loss during and after minor surgical procedures in patients taking anticoagulants can be controlled by local application of an antifibrinolytic mouthwash containing tranexamic acid(4.5%), gelatine sponges, oxidised cellulose and microcrystalline cellulose respectively<sup>19</sup>.

## Mental Health

The most common mental disorders of the elderly patients are dementia and depression.

## Dementia

Dementia is a collection of symptoms characterized by the development of multiple cognitive deficits (including memory impairment and atleast one of the following cognitive disturbances aphasia, apraxia, agnosia or a disturbance of executive functioning). Dentist should do a comprehensive and preventive oral rehabilitation of the patient since they develop reduced cooperation towards the treatment as disease advances. Informed consent has to be taken from the relative or guardian of the patient.

Dentist should always prefer non pharmacological management of the dementia patients whenever possible. Newer communication techniques like Rescuing, Distraction, Bridging, Hand over hand etc can be utilized for their effective management<sup>20</sup>.

The patients may forget dental appointments and may not follow proper oral hygiene instructions. Hence the dentist should involve a caregiver or family member in their treatment. To avoid aspiration and postural hypotension, the patient should be treated while sitting upright in the dental chair or slightly reclined<sup>21,22</sup>.

## Depression and Mood disorders

Dentist must exhibit great tact, patience and a sympathetic manner in handling patients who are depressed. Studies report that more than 25% of the geriatric adults are depressed due to various reasons. Dentist should take special considerations while prescribing antibiotics and analgesics to these patients under treatment for depression.

Any central nervous system depressant especially opioids and phenothiazines given to patients to patients

who are taking monoamine oxidase inhibitors or within MAOIs withdrawal may precipitate a coma. Acetaminophen can inhibit the metabolism of tricyclic depressants<sup>23</sup>.

## Conclusion

In conclusion systemic diseases in geriatric patients have a significant impact on the tissues throughout the body, including the oral cavity. Early intervention and management of these oral manifestations help to prevent the development of long term complications of the systemic disorders in oral cavity. The future will include a greater need for dental and medical practitioners to communicate and manage the patients effectively. There is a need for highly skilled geriatric dentists as specialists to serve the senior adults.

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#### Moderate activity may prevent Parkinson's

Paralysis agitans (Parkinson's disease) is a progressive neurodegenerative motor system disorder that affects individuals older than 50 years of age. Until now only consumption of caffeinated drinks and smoking (!! ) have been shown to have some protective effect against its development. Now in a new prospective study conducted in Sweden, 43000 men and women were followed up for more than 12 years. During that period, all information related to physical activity was collected from each study subject until it was interrupted by development of Parkinson's in the participant or his death or his departure from the country. When the information was statistically analysed, it was found that the study subjects who spent more than 6 hours daily in moderate physical activity (routine household activity, commuting etc.) had a 43% lower risk of developing Parkinson's compared to those who spent only 2 hour a day in similar activity. Leading a physically active life appears to be the key to stall this dreaded disease. (Physical activity and risk of Parkinson's disease in the Swedish National March Cohort, Fei Yang et al., *Brain*, doi:10.1093/brain/awu323, published online 19 November 2014)

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