

# Prosthodontic Management of Patients with Systemic Disorders

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## **Abstract:**

**Aim:** *The present paper aims to highlight the prosthodontic management of patients with some common systemic disorders.*

**Background:** *The increase in life expectancy, more desire for improved standard of life and increased importance to esthetics has resulted in many ambulatory patients with systemic health disorders walking into the dental clinics.*

**Results:** *Systemic diseases can have a local manifestation with no apparent systemic symptoms or may present with both local as well as systemic reactions. Accordingly, the assessment of medical risks and its relationship to oral health becomes a major area of concern.*

**Conclusion:** *Dental specialists have a responsibility to contribute to overall health by subsequent maintenance of the oral health.*

**Clinical significance:** *As certain systemic disorders may produce a pernicious effect on the oral health, it is incumbent for the dental specialists to be aware of the several systemic conditions and also to consider them in the treatment plan.*

**Keywords:** *systemic disorders, prosthodontic management, dental implants, occlusion, fixed partial denture*

**Introduction:** Dental patients vary in their systemic health and prevalence of systemic conditions that might affect dental treatment appears to be high. Surveys indicate that 25% of persons between ages 35 and 74 years are edentulous and require a high amount/degree of prosthetic care.<sup>[1]</sup> Oral health and systemic health are inter-related. This is particularly more apparent when the patient seeking oral health care presents with some systemic disorder. An evaluation and consideration of overall health status of patients prior to any dental procedure forms an essential part of comprehensive health care system. To avoid complications it is necessary to identify such systemic conditions that have an impact on, and can be impacted by dental treatment.

Presence of medical conditions may alter dental treatment because of direct or indirect effects on oral tissues, bacteraemia, compromise of the immune system, drug interactions, sensory and motor disturbances and disturbances in psychological status of the patients. Most of the treatment of oral diseases includes invasive procedures. Presence of systemic diseases decreases the patient's tolerance to dental treatment. A compromise in the systemic health usually distracts the patients mind from maintaining or giving attention to his oral health which eventually deteriorate the condition. Prosthodontically, the procedures should not be planned until the overall systemic health status of the patient is thoroughly evaluated as the presence of underlying systemic disorder can cause changes in the oral cavity which can affect the treatment planning as well as prosthetic procedures.

**Prevalence of systemic disorders:** The worldwide prevalence of diabetes mellitus is 8.5%, chronic kidney disorder is 10.6-13.4 %, anemia is 24.8%, leukemia is 2.5% and hyperthyroidism is 0.2-1.3%.<sup>[2-6]</sup> Nearly 422.7 million of the world population suffers from cardiovascular disorder and 43.8 million suffers from dementia.<sup>[7,8]</sup> According to a report of WHO (2003), dental diseases are the most prevalent globally and an estimated 5 billion people suffer from tooth decay.<sup>[9]</sup> There are various studies showing different prevalence rate of systemic diseases in dental patients. Study by Cottone and Katyrayastated that two thirds of all dental patients had a medical history positive for at least one problem, and more than 50% of these patients reported multiple medical problems.<sup>[10]</sup> Fernandez-Feijoo J and colleagues found prevalence rate of systemic disease among patients requesting dental consultation to be 35.2% in public system and 28.1% in private system.<sup>[11]</sup>

**Prosthetic management of patients with some common systemic problems:**

**Endocrinal disorders:**

**Diabetes mellitus:** Diabetes mellitus is a metabolic disorder that is characterised by the symptoms of polydipsia, polyuria, and polyphagia in correlation with exceeded blood glucose levels more than 200 mg/dL.<sup>[12]</sup> The disease produce various effects in the oral cavity like: aggressive periodontal disease, alveolar bone loss, increased risk of periodontal abscesses, xerostomia, candidiasis and denture stomatitis. Increased residual ridge resorption is seen in patients with diabetes mellitus.<sup>[13]</sup> Thus, while planning complete denture prosthesis for such patients minimal pressure technique should be used to record impression. To increase the stability of complete denture prosthesis and to prevent further ridge resorption, neutral zone

technique, lingualized occlusion or neutrocentric concept of occlusion are advisable. Salivary denture reservoir is indicated in severe cases of xerostomia which is commonly seen in diabetics. To prevent fungal infection in these patients, proper patient education for maintenance of oral and denture hygiene, and regular use of denture cleanser is recommended.

If Rpd is planned, the design should have wider self-cleansing interdental spaces and embrasures areas, uncovered marginal gingiva, point contact between denture and natural abutment teeth, free gliding occlusion, and maximum retention.

For patient's requiring fixed partial denture (FPD), the finish-line of the preparation should be placed supragingivally. A narrow occlusal table, group function or mutually protected occlusal scheme is better choice for periodontally compromised teeth which are frequently present in diabetics.

Usually the masticatory efficiency of removable prosthesis is lower than that of fixed or implant supported prosthesis.<sup>[14]</sup> Hence, when diabetes is well controlled, implant placement can be accomplished with least trauma under stress free environment to enhance the overall health of patients.<sup>[14-16]</sup> It is recommended to keep patients on chlorhexidine mouth wash and antibiotic prophylaxis to improve implant survival rates. In the initial years after implant insertion, there is relatively no elevated risk of peri-implantitis; but in the long-term observation, peri-implant inflammation seems to be increased in diabetic patients. Therefore, frequent dental recall visits may prove helpful to detect early signs of gingivitis, which can easily be treated by oral prophylaxis and chances of development of severe peri-implant infection can be avoided. Regular evaluation of HbA1c level of the patient may be useful for the of long term maintenance of implants.<sup>[15]</sup> However, implant placement is contraindicated in cases of uncontrolled diabetes mellitus where severe hyperglycemia, microangiopathies, impaired leucocyte function, decreased cellular immunity and reduced collagen production usually hampers wound healing.

**Thyroid disorders:** Hyperthyroidism is an endocrine disorder that occurs due to excessive production of thyroxin by the thyroid gland, often resulting in a generalized increase in the metabolic rate of body, causing an increase in blood pressure, tachycardia and affects the jaws as osteoporosis does causing a decrease in bone density, altered trabecular bone pattern and bone loss.<sup>[17,18]</sup> Thyroid hormones-related disorders have also been demonstrated to affect cortical bone healing around titanium implants.<sup>[19]</sup> Therefore implant treatment in patients with hyperthyroidism history is a compromised treatment. However in medically controlled cases of hypothyroid and hyperthyroidism with normal thyroid function and no symptoms of disease within the past 6 months, a normal protocol may be used for all restorative procedures including dental implants. It is important to know that dental implant placement may trigger a congestive heart failure, or may initiate a cardio-respiratory depression in patients who suffer from thyroid disorders and appropriate care should be taken to avoid such complications.<sup>[18]</sup>

**Cushing's syndrome:** The hypofunction of the adrenal glands (Cushing's syndrome) causes a delay in wound healing and increases the risk of secondary infection by decreasing the patient's ability of antibacterial defense. Long-term corticosteroid therapy also affects the dental implant and is considered as a relative contra-indication for the implant placement.<sup>[18]</sup>

**Neurological disorders:**

**Parkinson's disease (PD):** These patients exhibit poor neuro-muscular co-ordination, muscle rigidity, postural instability and gait disturbance. Edentulism is commonly seen in patients with PD due to advanced periodontal disease. The semi-reclined 45-degree position during impression procedure should be used to avoid excessive saliva pooling and the risk of choking. It is advisable to record impressions with quick-setting impression materials. The use of monoplane artificial acrylic teeth and reduction in the vertical dimension of the dentures is advisable for these patients to stabilize the occlusion in patients with poor muscular control to accommodate irregular mandibular movement. Lingualized occlusal scheme should be used to limit lateral denture movements and better masticatory efficiency. To enhance stability and retention of denture use of neutral zone technique is recommended. To provide better proprioception, controlled jaw movements and masticatory efficiency implant or tooth supported overdentures are advisable. Magnets can also be used for easy placement of the dentures.<sup>[20-22]</sup>

For removable partial dentures, the major connectors of smaller design should be avoided to prevent the risk of aspiration and choking. Flexible removable partial dentures can be used to obtain good retention and stability. Due to the absence of the required stable movement for insertion of a prosthesis precision attachments aren't advocated in these patients.<sup>[20]</sup>

For the fixed partial denture, the margins of the prepared teeth should be kept supragingival or equigingival. Full coverage design should be followed for maximum retention and resistance. The contacts and contours of the pontic and retainers should be self-cleansing. Resin cement should be used for cementation for metal copings and fixed partial dentures as it reduces the microleakage. In addition, all the restorations should be finished with flat occlusal morphology.<sup>[20,22]</sup>

**Alzheimer's disease (AD):** The chief problems of patients with AD are behavioral. The dental appointments and instructions are usually forgotten. These patients usually present with a progressive neglect of oral health as a result of forgetting the need or even how to brush the teeth or clean dentures often leading to poor oral and denture hygiene. Therefore, dental professionals and caregivers should use behaviour management and preventive oral care techniques. Due to severe dementia, dentures are frequently lost or broken. To prevent breakage of denture during frequent falls high strength acrylic resin can be used for fabrication of removable prosthesis. Bilateral balanced occlusion using zero degree artificial teeth to avoid interference during lateral movement are indicated in patients with AD. Often in these patients, minor changes in oral environment can produce disturbances due to the impaired capacity for adaptation including difficulty in adaptation to new prostheses. Treatment plans should therefore be designed with minimal changes to the oral cavity and should not involve complete rehabilitation.<sup>[23,24]</sup>

**Bell's palsy:** The oral prosthesis plays an important role in patient's well-being when surgical treatment cannot be carried out in cases of Bell's palsy. Implant-supported prosthesis, detachable and undetachable cheek plumpers, can be used to provide support to the weakened muscles like buccinator, orbicularis oris and levator angulioris in order to improve comfort and esthetics of the patients. Neutral zone can be implied to balance the forces between tongue and buccal musculature.<sup>[25,26]</sup>

**Neuromuscular disorder:**

**Myasthenia gravis (MG):** Wearing removable dentures, especially complete dentures, requires a complex pattern of neuromuscular coordination. Muscle fatigue impairs muscle tonicity in these patients which often leads to difficulty in achieving peripheral seal and hence denture retention. Further, ill-fitting dentures, overextended and thick flanges may exacerbate muscle weakness. Thus, MG patients with complete dentures may experience chewing difficulties, characterized by reduced effectiveness of mastication and complaints regarding inefficiency. Since a higher bite force results with implant-supported prostheses compared with conventional complete dentures, implant-supported complete dentures could be beneficial for these patients.<sup>[27]</sup>

**Bone and joint disorders:**

**Osteoporosis:** Osteoporosis causes a generalized loss of BMD (bone mineral density) including maxilla and mandible. Jaw bones become porous and show microarchitectural deterioration of trabeculae and a decrease in cortical thickness. For the removable prosthesis, mucostatic and open mouth impression techniques are recommended. All the factors that help in decreasing the forces of mastication and hence prevent the fracture specially of the mandible such as narrowing of occlusal table, decreasing the number of posterior teeth and neutralization of the inclines are recommended. Also, the denture bases should be lined with soft reline material to provide cushioning effect to the jaw bones.<sup>[26]</sup>

According to the classification of Lekholm and Zarb the osteoporotic bone is similar to bone type 4 regarding cortical bone density.<sup>[28]</sup> This is a significant factor to be considered during surgical planning because type 4 bone presents a thin layer of cortical bone involving a large amount of trabecular bone with low resistance. This clinical situation, however, does not contraindicate the implant placement. Prosthodontist should be more careful during surgery; a proper case selection, the correct diagnosis of bone condition of the implant surgery site, proper bone augmentation, need of post-operative control can make the implant rehabilitation convenient in these patients. A longer period of osseointegration should be provided because the decrease in bone density affects the bone-implant contact. Surface treated or bioactive implants that provide greater anchorage and can increase bone implant contact may be beneficial for such patients. As the bone healing is delayed, implant loading should be progressive. Also careful attention should be given while placing the implant in maxilla mainly in the maxillary tuberosity where the fracture of cortical bone can cause implant locking.<sup>[28-30]</sup> One thing of concern to the prosthodontists is that the implants placed in patients with osteoporosis usually presents a greater marginal bone loss than those placed in systemically healthy patients.<sup>[29]</sup> Placing implants in patients with low bone density might require bone condensation and/or step osteotomy to enhance success.<sup>[31]</sup>

**Fibrous dysplasia (FD):** Currently, there is no universally accepted guideline for treatment of fibrous dysplasia. After thorough excision and proper recontouring of the diseased area, the implant placement can be done. Implants should however be placed after skeletal maturity and when the growth of the FD lesion has been abated. Longer screws can be used to compensate for the reduced bone implant contact. Rigid fixation with titanium plate, titanium mesh with bone chips, bone auto graft, free graft can provide added benefits. Care has to be taken to impede premature implant loading which can cause implant failure. As the chances

of regrowth is higher in FD, a total maxillectomy followed by zygomatic implants can also be practiced.<sup>[32-35]</sup>

**Osteitis deformans/ Pagets disease:** It is a slowly progressing chronic bone disorder with dysregulated bone remodelling and disorganized new bone formation. Due to a constant change in the supporting structures especially of the maxillary tuberosity, remakes and adjustment of dentures are frequently required. These patients have compromised bone density and may be contraindicated for dental implant surgery. With proper professional consultation with the patient's physician benefits of fixed prostheses can be provided to these patients.<sup>[32]</sup>

**Temporomandibular joint disorders (TMD's):** Patients with TMD's often suffers from painful mandibular movements which presents a problem for the construction of removable prosthesis. Special impression trays are required because of limited access resulting from reduced ability to open the jaws. Sectional impressions, hinged complete denture prosthesis with swing lock, sectional/collapsible dentures may be used. In patients with TMD's whenever possible, the existing maxillo-mandibular relations as defined by the current intercuspal relationships (maximum intercuspation) should be maintained. Three to five occlusal units are necessary to allow a stable jaw relationship at maximum intercuspation. If sufficient posterior support is missing, the restoration should be made in centric relation; however, a more anterior position may be acceptable if CR is an uncomfortable position for the patient. In the instance of TMJ arthropathies, it is often necessary to restore in a mandibular position that is ahead of CR. It is recommended to test the favored condylar position with the help of an oral splint before prosthetic rehabilitation is begun. Fixed restorations should be temporarily cemented and the patient should be rescheduled on a regular basis. When final cementation is considered, a segmental approach may be advantageous. Additionally, overstretching of the TMJs and the facial muscles should be avoided. The use of a mouth prop may be beneficial, to prevent the patient to keep her or his mouth actively open, along with adequate breaks within single treatment session.<sup>[36]</sup>

**Cardiovascular disorders (cvd):** There is a relationship between the number of unreplaced teeth and mortality due to CVS and hence prosthetic care is required for such cases.<sup>[37]</sup> Patients with cvd's should be given as short appointments as possible. Stress reduction protocol is the key factor in treatment planning and surgical procedures in patients with cvd's. Subgingival finish lines and use of retraction cords dipped in vasoconstrictive agents such as epinephrine should be avoided. The cvd's are also known to cause reduced blood flow, oxygen tension and nutrients to the tissues. Therefore they may be expected to have a negative influence on healing process after implant placement and may be associated with an increased risk of implant failure.<sup>[38]</sup> So, the prosthodontist must be prudent enough for case selection and implant placements in such patients. Antibiotic prophylaxis for bacterial endocarditis is obligatory for high risk patients like previous endocarditis, prosthetic heart valve, rheumatic valvular defect, congenital heart disease. In patients who take anticoagulants, less invasive surgical procedures should be planned, such as flapless insertion of the dental implant which can reduce the associated risks and minimizes the chances of bleeding. Calcium channel blockers used as hypotensive medication, produce gingival hyperplasia, both in the natural dentition and around the implant or superstructure bars of

overdenture especially with nifedipine, which calls for the drug substitution from the physician.<sup>[18,32]</sup>

### **Haematological diseases:**

**Anemia:** Bone maturation and development are often impaired in the long term anemic patient. Still, in most of the anemic patients, implant procedures are not contraindicated, however preoperative and postoperative antibiotics needs to be carefully administered. Patients with anemia usually show disrupted and delayed healing pattern and therefore require a longer time for the implants to osseointegrate. Progressive loading of the implants should therefore be followed.

**Leukemia:** Leukemia is a malignant neoplasm that occurs due to the uncontrolled proliferation of and release of immature blood cells from hematopoietic system. Removable partial or complete dentures that doesn't irritate the soft tissue can be used for the replacement of the missing teeth provided that the patient maintains good oral hygiene. Fixed partial dentures with supra-gingival finish lines and digital impression techniques are recommended to prevent any injuries to the gingiva. Severe bleeding, delayed healing, increased risk of secondary infection and post-operative discomfort contra-indicates the implant placement in these patients.

**Renal disorders:** Patients with renal disorders usually presents with immunosuppression, polypharmacy, renal osteodystrophy, bone loss, and restriction of oral fluid intake. This may produce oral changes such as premature tooth loss, edentulism, xerostomia and hence require prosthetic care. All the dental problems of a patient with chronic renal failure should be treated prior to transplantation because in order for the body to accept transplantation the immune system is suppressed by immunosuppressive agents that simultaneously reduces the ability of the body to cope with systemic infections as well as stress usually caused by the dental treatment. When implants are to be placed prior to transplantation, an adequate period of time for the osteointegration of the implants should be given. If implants are planned after transplantation than dental surgery has to be postponed until the patient's health has been stabilized and the transplant has been fully accepted by the body. As most of these patients are hypertensive, local anesthesia without vasoconstrictors should be preferred. Patients who have undergone corticosteroid treatment for a long period of time, might require a supplementary corticosteroid dose in order to prevent an Addisonian crisis.<sup>[39]</sup>

Osteodystrophy is a common finding in patients with chronic kidney disorders which can lead to bone demineralization, decreased trabeculation of cancellous bone, decreased thickness of cortical bone of the jaws and may cause jaw fracture either spontaneous or after dental procedures, so implant placement has to be carefully monitored.<sup>[40]</sup>

In the patients with hemodialysis the implant surgery should be performed on the first day after hemodialysis. Patients receiving hemodialysis three times a week have an interval of 2 days between sessions, so in such cases the implant surgery can also be scheduled for the second day after hemodialysis. Due to the possible alteration in bone structural integrity in dialyzed patients long term implant stability should be measured using RFA or frequent radiographs.<sup>[41]</sup>

Gingival enlargement around natural tooth as well as dental implant is commonly seen in renal failure patients taking calcium channel blockers. The nephrologist can be

consulted in order to exchange a calcium channel blocker for another antihypertensive medication. Proper periodontal maintenance is necessary to avoid the gingival enlargement, peri-implant mucositis and peri-implantitis. The main therapy for this includes nonsurgical approach, such as drug therapy, laser therapy, and photodynamic therapy. Cases that do not respond to non-surgical measures, atraumatic surgical removal of the implant should be performed to avoid fractures of maxilla and mandible. Removable prostheses can be advised thereafter. Considering these possible risk factors, screw retained implant prosthesis are recommended for ease of maintenance.<sup>[39-41]</sup>

**Patients with pulmonary disorders:** There do not appear to be any direct effects of pulmonary diseases on oral health. The medications prescribed for these patients can cause xerostomia, an increased risk of caries, gingivitis, and oropharyngeal candidosis. Patients with chronic obstructive pulmonary disorder (COPD) may experience worsening of respiratory function during dental treatment; therefore a number of precautions are recommended. It is advisable to treat the patient in the vertical position. Modification in rubber dam placement may be required in some cases if the patient complains of suffocating sensation. If the patient is receiving corticosteroids (inhaled and systemic), supplements may be needed prior to dental procedures that might cause stress; and also because corticosteroids may alter the ability to heal after surgery or trauma which is needed to be considered while planning any pre-prosthetic and dental implants surgeries.<sup>[42,43]</sup>

While treating asthmatic patients, dental health care providers should be aware of the patient's level of control of his disease. It is often prudent for the dentist to review and discuss the medications, frequency of exacerbations and triggers of attacks before dental treatment. Care should be taken while using dental materials that have powder as a component (eg, alginate and allergens used in latex gloves) which may worsen the patient's airway obstruction if the powder is inhaled. Anxiety can trigger an asthma attack and may exacerbate chronic bronchitis by increasing smooth-muscle contraction hence stress reduction protocol is to be followed. Asthmatic patients can suffer from gingivitis, since they are often oral breathers which may lead to increase gingival inflammation. The use of oral rinses after medication has been found to be of great help in preventing oral lesions. When fixed restorations are given, subgingival finish lines should be avoided. Sulfites used as an antioxidant and preservative for vasoconstrictors, such as epinephrine or levonordefrin in anesthetic cartridges, may trigger an asthmatic attack, hence plain anaesthesia is advisable. The analgesics of choice are acetaminophen and propoxyphene. Oral premedication with diazepam can be used in small doses.<sup>[42,43]</sup> Certain medications which may worsen the condition of asthmatic patient are highlighted in table 1.

Plaque-biofilm from poor denture hygiene may serve as a reservoir of potentially infectious pathogens by ingestion and aspiration of microbes. This risk can be prevented by means of information, patient education and following appropriate oral and denture hygiene methods that include daily brushing, flossing, and rinsing with antimicrobial mouthwashes. Frequent polishing of the roughened surface of denture base is recommended on recall appointments.<sup>[44]</sup>

**Patients with xerostomia:** Xerostomia is a common symptom seen in patients with diabetes mellitus, chronic renal disorders and Parkinson's disease. Frequent water sipping and artificial saliva substitute should be advised to these patients to compensate for the oral dryness. For

recording impression in xerostomicpatients silicone impression materials should be used as they are the best tolerated and least traumatic to the mucosa. Use of zinc oxide eugenol paste, should be avoided as they can may cause the oral mucosa to burn. When RPDs are given, gingivally approaching clasps should be avoided. Dentures incorporating metal bases should be used as they exhibit improved accuracy of fit and effective wetting contributing to better retention. If resin denture bases are usedsoft relining can be done to improve comfort. Patients can be advised to spray/wet their prostheses with artificial saliva before denture insertion and before meals. Water based denture adhesives can be used to augment retention as well as to provide hydration, cushioning and lubricating effect in xerostomic patients. When fixed partial dentures are given they should have full coverage retainers and easily cleaned pontics. The margins of retainers should be supragingival.<sup>[45,46]</sup>

**Patients with bruxism:** As there is no specific treatment for bruxism, the focus is to reduce the adverse effects of the habit. The most common method used to prevent the destructive effects of bruxism on wear of teeth and prosthodontic restorations is through different types of interocclusal appliances (e.g. occlusal splints, nightguards, etc). While doing prosthetic rehabilitation in patients with bruxism efforts should be made to reduce the effects of heavy occlusal loading on all the components that contribute to prosthetic structural integrity.In cases where distal extension removable partial dentures and complete denture prosthesis are required, soft relining should be done to prevent the resorption of underlying residual ridge from the excessive forces of mastication.

When restoring the patients with fixed partial dentures, metal seem to be the safest choice in these cases. Zirconia restorations are contraindicated specifically when opposing natural teeth are present as they may lead to severe abrasion of natural dentition. Single crowns should be constructed whenever possible and short span FPDs should be given. Boxes, grooves or parallel pins can be used in the preparation to aid in the retention of conventionally retained crowns on short and worn outabutments.<sup>[47]</sup>

When implant supported restorations are planned in bruxers, preventive measures should be taken to minimize the forces that are applied to implants. The number of implants should be increased in order to reduce the amount of forces received on each individual implant. The implants with a larger diameter and longest length allowed by the remaining bone should be used to reduce the amount of stress in the cortical bone. Efforts should be made to design the prosthesis that will improve the stress distribution on implants i.e., implants must be placed perpendicularly to the curves of Spee and Wilson to favor direct contacts to the long axis of the implants generated during the vertical function. Use of narrow occlusal table and flat cusp angles.Immediate loading of implants should be avoided as excessive biting pressure will prevent the osseointegration of the implants. In addition, before proceeding for any treatment, patients should be informed about the need for regular maintenance to avoid complications and accept the possibility of technical complications that may generate additional costs of maintenance.<sup>[48]</sup>

**Patients with psychological disturbances:** Patients with any psychological abnormality are considered as a contraindication for removable prosthesis and dental implant treatment due to the patient's un-cooperativeness, lack of understanding and behavioural problems.

**Immuno-compromised patients:** Since a good immune response is necessary for wound healing, organ transplantation, immunosuppressive drug usage and AIDS patients with

severely impaired immune system have been commonly assumed as a contraindication for dental implant placement.

**Radiation therapy:** Patients with a history of radiation therapy to head, neck and face region have a plethora of issues with the tissue healing after surgery. Dental implants are generally contra-indicated in this group of patients.

**Substance abuse:** Depending upon the severity and duration of the individual's addiction, drug and alcohol abuse should be considered as a contraindication for implant therapy.

**Conclusion:** There is a high prevalence of systemic diseases among patients requiring dental treatment. It is the responsibility of the dentists and other health care providers to be aware of the congruous relationships between oral and systemic health. The systemic condition of the patients should be thoroughly evaluated and necessary precautions should be taken prior to and during prosthodontic treatment to avoid any complications. A compendious treatment planning should be done to improve the overall and oral-health related quality of life of such patients. Prosthodontists play an important role in the overall management of such patient's health by prevention and treatment of oral and to some extent systemic diseases, in coalition with the patient and his physician. As each individual differs anatomically and physiologically, the decision-making for prosthetic rehabilitation of such intricate cases in the end should be driven by a combination of information obtained from all sources and clinical experience to make the final diagnosis and treatment planning.

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Tables:

Table 1: List of medications to be avoided in patients with asthma:

Sr. no	List of drugs	Associated cause
1.	Aspirin or other nonsteroidal anti-inflammatory drugs	Exacerbate asthmatic attack
2.	Codeine-related drugs (eg, oxycodone and hydrocodone)	May aggravate bronchospasm
3.	Narcotics, sedatives, and tranquilizers	Respiratory depression
4.	Macrolide antibiotics eg erythromycin, clarithromycin (specially when patients are taking Theohylline)	Macrolides may increase Theophylline level
5.	Opiates	These can cause respiratory depression and histamine release.