Dental Management of Renal Failure Patients-

ORAL MANIFESTATIONS-

Oral	
	approximately 90% of CRF patients experience oral manifestations
Uremia	bad odor, metallic taste
Xerostomia	due to reduced fluid intake, polypharmacy, salivary gland dysfunction and sleep apnea.
Pallor	paleness of mucous membranes
Uremic stomatitis	uncommon finding related to uremia painful bleeding, hyperkeratotic ventral tongue, buccal mucosa 
Bleeding	gingival bleeding, petechiae, ecchymosis resulting from platelet dysfunction
Gingival hyperplasia	secondary to use of cyclosporine, calcium channel blockers
Erosion	erosion of lingual surfaces due to frequent vomiting and nausea
Periodontal disease	
Pulp obliteration, enamel hypoplasia	related to altered calcium and phosphate metabolism
Delayed dental eruption	
Altered bone composition	renal osteodystrophy resulting in decreased trabeculation, loss of cortication, giant cell radiolucencies and soft tissue calcifications increased fracture risk during extractions
Caries	decreased due to bacteriostatic effect of urea
Infections	candidiasis, cytomegalovirus following transplantation
Mucosal lesions	lichenoid lesions, oral hairy leukoplakia secondary to immunosuppression
Malignization	potential increase risk of epithelial dysplasia and carcinoma following renal transplantation. Immunosuppression predisposes mucosa to viral tumors such as Kaposi's sarcoma or non-Hodgkin lymphoma.

General modifications:

o Multidisciplinary approach to health care involving creation of dental plan in context of patients overall medical status

o Consultation with patient's nephrologist to determine the state of the disease, treatment being received, ideal timing for dental treatment, and possible medical complications that may arise. Proposed changes to patients' medications or treatment timing must discussed with the nephrologist.

o Prior to invasive dental treatment must obtained complete blood count and/or coagulation tests to identify any alterations

o Prompt elimination of sources of infection or oral trauma

o Consideration for antibiotic prophylaxis when treatment involves bleeding or risk of septicemia (extractions, periodontal therapy, endodontics, periapical surgery, orthodontic braces, implant surgery, reimplantation). Consultation with treating doctor will be required.

o Continuous cardiac monitoring in combination to stress reduction methods (sedation)

o Dose adjustment of drugs whose pharmacokinetics are altered in context of renal failure.

Pharmacologic modifications

o Avoid aminoglycosides, tetracycline's due to nephrotoxicity

o Usual doses of penicillin, clindamycin, cephalosporin's may be administered but at a prolonged dosing interval

o Acetaminophen remains analgesic of choice. Due to the prolonged antiplatelet activity, aspirin should be avoided in patients with uremia. NSAIDs require dose reduction or complete avoidance in advanced renal failure as they impart a hypertensive effect

o Benzodiazepines do not require dose adjustments, however excessive sedation may occur

o Medications primarily metabolized by the liver, including narcotics (codeine, morphine, fentanyl) do no not require dose adjustment

Modifications for dialysis patients

o Peritoneal dialysis patients require no special modifications beyond the general precautions listed above

o Hemodialysis patients should receive dental care on non-dialysis days in order to prevent excess bleeding. Heparin which has a half-life of four hours, must be eliminated from circulation prior to treatment. Invasive treatment should be preceded by complete blood count and coagulation tests. Local hemostatic measures must be available, including mechanical compression, sutures, topical thrombin, microfibrillar collagen and oxidized cellulose. Additional hemostatic measures may include desmopressin for severe bleeding renal failure patients, conjugated estrogens, and tranexamic acid rinse or oral tablet (10-15 mg/kg/day).

o Antibiotic prophylaxis remains controversial for these patients. Consultation with treating doctor will be required.

Transplant patients

o Elective dental care should be avoided within the first 6 months after transplantation

o All sources of infection and hopeless teeth must be extraction prior to transplantation

o Risk of oral infection after transplantation is very high due to concurrent immunosuppressive therapy. Antibiotic prophylaxis is a necessity before invasive dental care. Consultation with treating doctor will be required.

o Stress dosing may be required for patients receiving prolonged corticosteroids