



ORAL MANIFESTATIONS, DENTAL PRECAUTIONS AND MANAGEMENT TO BE ADOPTED IN CHRONIC RENAL FAILURE PATIENTS-AN OVERVIEW

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ABSTRACT Chronic renal failure is an important health care problem throughout the world with a wide spectrum of presentation and systemic manifestations. Management of CRF consists of changes in diet, life style management, dialysis (renal/peritoneal) and renal transplant. Oral manifestations and the repercussions of the dental management need several special precautions and considerations. Consultations with the patient's physician, nephrologists are important in order to modify the dental treatment procedures and therapeutic management and adjustments in the prescriptions to prevent complications in the dental treatment. The present article reveals the characteristics of the disease, the therapeutic options, and the consideration of relevance to the dental professional.

KEYWORDS : Renal failure , CRF ,Oral manifestations ,renal dialysis

INTRODUCTION:

ORAL MANIFESTATIONS OF CRF

Anemia-Paleness of the Oral mucosa due to chronic anemia

Xerostomia- As a resultant of restricted fluid intake, the adverse effect of antihypertensive agents, resulting in salivary gland alterations

Uremic stomatitis- It is very painful and appears on the ventral surface of the tongue and on the anterior part. The lesions are resistant to treatment as the urea levels remain high.

Gingival bleeding- Petechiae and ecchymosis results from platelet dysfunction and due to the effects of anticoagulants. The bleeding tendencies tends to be related to the degree and duration of uremia. It may be as a result of anticoagulant effect of heparin during the dialysis procedure.^[1]

Gingival hyperplasia- Secondary to the drug treatment is one of the most common well documented oral manifestations in patients with CRF. It may induced by cyclosporine, which is used in renal transplant patients or due to calcium channel blockers such as (nifedipine, amlodipine, diltiazem, verapamil, etc.) Hyperplasia mainly affects the labial surface of the interdental papilla.^[6]

Enamel hypoplasia- Secondary to calcium and phosphorous metabolism. It can affect the primary as well as the permanent dentition. Severe erosions on the lingual aspects of the teeth due to frequent regurgitation and vomiting induced by medication and uremia and nausea associated with dialysis.

Pulp obliteration- Related due to calcium and phosphorous metabolism.

Delays /Alteration in Eruption

Changes in maxillary bone- Secondary to renal osteodystrophy the changes include demineralization with cortical bone loss and trabeculation leading to metastatic soft tissue calcification. The patients are liable for increased risk of fractures during extraction of teeth.

Tooth mobility, malocclusion and crowding.

TMJ problems- are also observed

Infections –

- **Candidiasis** is common due to prolong immune suppression
- **Herpes Lesions**
- **Lichenoid lesions**
- **Oral Hairy Leukoplakia** secondary to drug induced immune suppression^[10]

DENTAL MANAGEMENT OF RENAL FAILURE PATIENTS

Patients with renal failure require special consideration in relation to dental treatment not only because of the disease and multiple oral manifestations but, also because of their adverse effects and the rationale of the treatment they receive.

1) Consultation with the nephrologists will provides pertinent details

about the disease, the type of treatment, the best time for dental management or the medical complications that may arise any modifications that may be necessary in the usual medications or any other changes required should be first consulted with the nephrologists.^[7]

- 2) Co-operation with the medical and dental professionals are a must in order to improve the oral and general health of the patients.
- 3) Prior to any invasive dental procedures a complete hematological investigation and coagulative study should be done
- 4) It is essential to eliminate any infections in the oral cavity. Antibiotic prophylaxis should be considered anticipating any bleeding /risk of septicemia must be expected in case of extractions, periodontal procedures, endodontics, implant surgery, re implantation of the avulsed teeth etc.^[8]
- 5) Blood pressure both before and after the dental treatment and sedation should be administered whenever necessary.^[2]
- 6) The metabolism and elimination of certain drugs are modified in cases of renal failure .In such cases dose modifications and adjustments has to be carried out

- The prescriptions of amino glycosides ,antibiotics and tetracycline's has to be avoided as they are nephrotoxic
- Penicillin's ,clindamycin and cephalosporin's are the antibiotics of choice and can be administered at the usual dosages
- Paracetamol can be administered as an analgesic
- Aspirin should be avoided as it contains anti-platelet activity
- NSAIDS such as Indomethacin, Ibuprofen ,Naproxen and Diclofenac-sodium dose reduction or complete avoidance is indicated in the advanced renal disease /renal failure/end stage renal disease .As, they may interfere with the prostaglandin synthesis and induce hypertension
- Benzodiazepines can be prescribed without any dose adjustments
- Narcotic Analgesics such as codeine and morphine are metabolized in the liver and therefore do not require any drug adjustments
- 7) The dialyzed patients are at increased risk of bleeding. It is advisable to conduct dental treatment on non-dialysis days to ensure the absence of circulating heparin which has a half life time of 4hrs
- 8) In any case it is advisable for a complete hemogram and coagulation test before any dental treatment is done.
- 9) Before the start of dental procedure it is ensured local haemostatic measures are available ;

- Mechanical compression sutures
- Topical thrombin
- Micro fibrillar collagen
- Oxidated degenerated cellulose
- Desmopressin can be used to control longer and prolonged hemorrhage
- Tranexemic acid at a dose of 10-15mg/kg body weight per day in divided doses of twice or thrice daily is also useful^[9].

10) The recommended antibiotic prophylaxis regimen is 2g of amoxicillin orally 1 hour before the dental procedure.

11) In case if the patient is allergic to penicillin, Clindamycin is the drug of choice 600mg orally before dental procedure.

- 12) Dialyzed patients are subjected to numerous blood transfusions and there is an increased risk of infection like HIV, HBV, HCV and TUBERCULOSIS. Periodic monitoring is essential to avoid cross contamination/infection in the dental practice^[8]
- 13) It is important to conduct dental evaluation prior to renal transplantation in order to eliminate existing foci of infection.
- 14) Teeth with uncertain prognosis has to be removed
- 15) The potential for oral infections are too high as they receive immunosuppressive therapy. Prophylactic antibiotic has to be carried out before the invasive dental procedures.
- 16) Prolonged corticosteroid treatment may make it necessary to give supplementary dose in situation of stress I avoid to avoid an adrenal crisis.
- 17) The most recent guidelines recommend a dose of 25mg of Hydrocortisone IV route before any intervention.
- 18) In the first 6 months after transplantation, patients should avoid any elective dental treatment.^[3]

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DISCUSSION

In cases of CRF, Oral manifestations are evident to minimize or to overcome the complications. Suitable remedial measures such as modification and change in the pattern of dental treatment have to be undertaken and special precautions adopted wherever required.

It is likely spontaneous gingival bleeding and post extraction bleeding is possible.

This is due to the Heparin given as an anticoagulant during the dialysis .All the test such as complete hemogram & coagulative study particularly –Platelet count, bleeding time, prothrombin time, and activated partial thromboplastin time has to be undertaken.^[4]

Saline dialysis is a useful alternative to heparin dialysis in some patients with severe bleeding and in suspected coagulopathy. Transfusion of packed cell will improve the blood picture.

Dialyzed patients are subjected to numerous blood transfusions and there is an increased risk of infection like HIV, HBV, HCV and TUBERCULOSIS. Periodic monitoring is essential to avoid cross contamination/infection in the dental practice.^[5]

CONCLUSION

With an increase in the incidence of CRF globally and with an increase in the dialysis and an increase in the success rate of renal transplantation. There will be a challenging role for the dental professional to play a vital role in receiving , handling ,precautions to be adopted and in the management of such group of patients whether in the out patient clinics or at the in patient services of the hospital.

In view of the above discussion it is important to overall look into the qualitative management of such medically compromised patients in the Dental hospital and have a thorough knowledge in handling and dealing with such patients with utmost care and comfort. Therefore, to avoid all possible complications that may arise due to poor handling, negligence/ignorance.

* A thorough and complete screening with a proper medical history background is a must.

- In CRF who are on dialysis the dental procedures such as extractions, scaling and other procedures should be best carried out on Non-dialysis days to avoid bleeding, infection /septicemia'
- A complete hemogram and coagulation tests should be done
- Dental procedures can be attempted in CRF who has corrected their anemia at least above 10gm%.
- In the first six months after transplantation the patients should avoid any elective dental treatment.

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