Abstract

Background

Periodontitis is a chronic inflammatory disease which leads to the destruction of the supporting tissues of the teeth. Interaction between periodontal pathogens and host immune response can trigger inflammatory mediators. These inflammatory cytokines have been reported to decrease the release of erythropoietin from kidney and thereby can lead to anemia. Periodontitis is found to increase the systemic inflammatory burden possibly facilitated by acute phase reactants like C-reactive protein (CRP), which aggravates the existing metabolic conditions like diabetes, hypertension and anemia in chronic kidney disease patients undergoing haemodialysis. Evaluation of anemia associated with chronic diseases can be done by the estimation of serum iron, total iron binding capacity, transferrin saturation and serum ferritin.

Aim of the study

To evaluate oral health status, clinical, renal and haematological parameters in systemically healthy chronic periodontitis patients and chronic kidney disease patients undergoing haemodialysis of varying duration and to evaluate effect of non-surgical periodontal therapy on clinical, renal and haematological parameters at baseline and 3 months postoperatively.

Materials and Methods

This was a comparative interventional study which included sixty chronic periodontitis patients. These chronic periodontitis patients were divided into three groups which consisted of chronic kidney disease patients undergoing haemodialysis for less than a year (Group I), chronic kidney disease patients undergoing haemodialysis for more than a year (Group II) and systemically healthy chronic
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Periodontitis patients (Group III). Clinical parameters were recorded at baseline, 1 month and 3 months after nonsurgical periodontal therapy. C reactive protein (CRP), transferrin saturation (TSAT) and serum ferritin was observed at baseline and 3 months after nonsurgical periodontal therapy.

Results

The clinical parameters like Plaque index, Gingival index, Bleeding on Probing, Probing Pocket Depth and Clinical Attachment level showed pronounced reduction at the end of 3 months in all the groups. CRP reduced in all the three groups 3 months post-operatively, but statistically significant reduction was seen in Group I and group III only. TSAT increased significantly in all the three groups. With regard to serum ferritin, it was seen that serum ferritin increased significantly in Group I and Group II, whereas significant reduction was seen in Group III.

Conclusion

It was seen that clinical parameters reduced in both systemically healthy periodontitis patients as well as chronic periodontitis patients undergoing haemodialysis of varying duration. It was noted that nonsurgical periodontal therapy can bring about reduction in CRP level and also improvement in iron indices in systemically healthy periodontitis patients and also in chronic kidney disease patients undergoing haemodialysis of varying duration. However studies with larger sample size and longer duration of follow up are required to confirm the findings.