

EFFECTS OF PERIODONTAL THERAPY ON CLINICAL PARAMETERS IN PATIENTS WITH RENAL DISORDERS

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Abstract

Introduction. Chronic renal disease (BRC) is considered worldwide as a public health problem, mainly due to high morbidity and mortality. Chronic periodontitis (PC) is an immune-inflammatory disease caused by Gram-negative bacteria that destroy tooth support tissues and which induce local inflammation associated with an inflammatory systemic response. Recent studies have shown an association between high levels of reactive protein C PCR) and interleukin-6 (IL-6) and periodontitis, an association that decreases after periodontal treatment (periodontal therapy). Because of this association with the systemic inflammatory response, PC has recently been included as a risk factor for BRC. **The purpose of the study.** In this study we wanted to evaluate the clinical effect of periodontal treatment in patients with CKD and CP. **Materials and methods.** The patients were divided into two groups: the first group consisted of CKD patients who were conservatively treated with periodontal treatment and the second group was a control group consisting of patients without any systemic disease who presented moderate to severe CP, also undergoing conservative periodontal treatment. **Results.** At baseline, PC was more severe in BRC group than in the control group, as most of the sites with the periodontal pocket depth PPD \geq 5mm periodontal ($p = 0.03$) and loss of attachment CAL ($p = 0.003$). However, the results of periodontal treatment were noticeably improved only in the group of patients with periodontal disease but without chronic conditions. **Conclusions.** Successful periodontal disease reduces the abnormal level of clinical parameters and that can induce an increase of systemic inflammatory response, indicating that it can be an important intervention therapy at patients with chronic kidney disease.

Key words: chronic kidney disease, periodontal disease, periodontal treatment.

Introduction.

Chronic kidney disease (CKD) is considered worldwide as a public health problem, mainly due to high morbidity and mortality. Chronic periodontitis (CP) is an immune-inflammatory disease caused by Gram-negative bacteria that destroy tooth support tissues and which induce local inflammation being associated with an inflammatory systemic response. [1,2,14,15] Recent studies have shown an association between high levels of reactive protein C (CPR) and interleukin-6 (IL-6) and periodontitis, an association that decreases after periodontal treatment (periodontal therapy). Because of this association with

the systemic inflammatory response, CP has recently been included as a risk factor for CKD. [3,4,5,16]

The fundamental idea that we rely on in the formulation of the objectives of this study is that the main goal of managing patients with BRC at present and probably more and more in the future is to provide these patients with a fulfilled and independent "normal life"[9,10,11,12]. The integration of the medical recovery means, depending on the results of the analysis of some parameters studied, in the multidisciplinary approach of the management of these patients will ensure the therapeutic success.[6,7,8,13]

Materials and methods.

This study was performed in

Specialized Ambulatory of the Emergency Hospital "Sf. Apostol Andrei "Galati, Department of Nephrology. The study was

also performed in collaboration with the Department of Periodontology of the Faculty of Medicine and Pharmacy from "Dunărea de Jos" University, Galati. The patients were divided into two groups. The first group consisted of 36 patients with CKD and CP who underwent conservative periodontal treatment. The second group was a control

group of 20 patients without systemic disease, with moderate to severe CP, with sites with periodontal pocket depth (PPD) \geq 5 mm, with at least 1 site with a clinical attachment level (CAL) \geq 6 mm, and alveolar bone loss assessed radiographically, also undergoing periodontal treatment.[9]



Fig.1 Chronic periodontitis: calculus deposits and microbial plaque



Fig.2 After initial etiological treatment manual calculus removal and professional brushing



Fig.3 Maxillary arches after initial etiological treatment

Results and discussions. Patients in the study groups had homogeneous demographic characteristics, and periodontal therapy was the only variable in both groups. The associated systemic diseases most commonly identified in the CKD group were hypertension (97.2%) and diabetes mellitus

(27.8%). It is important to emphasize that no patient has used statins or iron substitution therapy during the study. The study was conducted from march 2016 to august 2017 and was finished after the monitoring of the participants was complete.

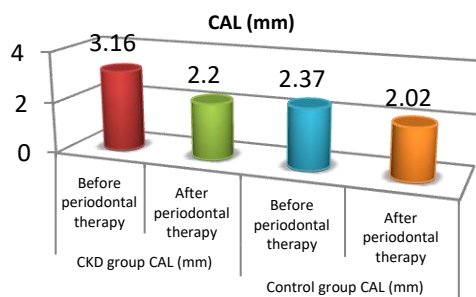


Fig.1 Clinical attachment loss before and after periodontal therapy

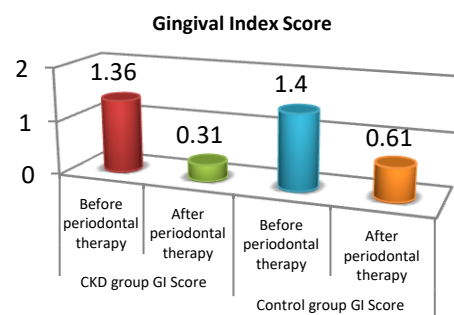


Fig.2 Gingival Index before and after periodontal therapy

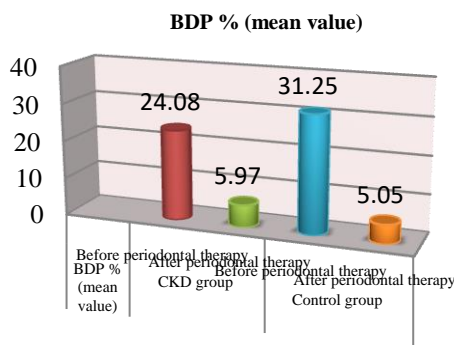


Fig.3 Mean value of bleeding on probing before and after periodontal therapy

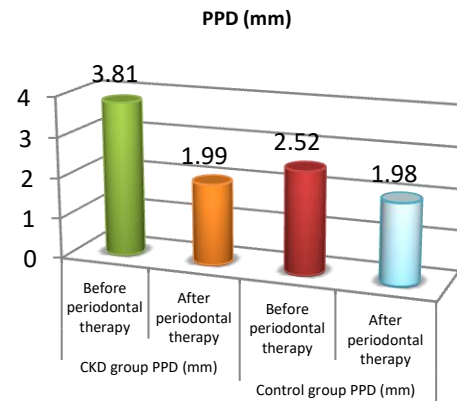


Fig.4 Periodontal probing depth

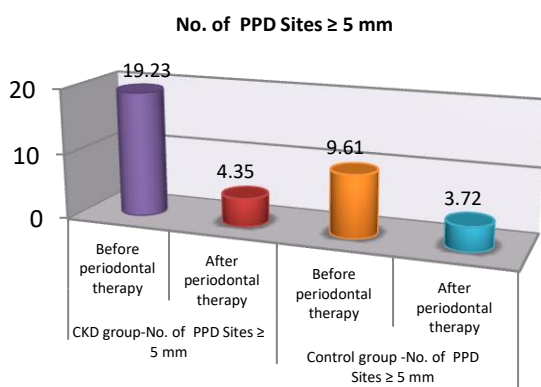


Fig.5 Number of periodontal probing depth sites

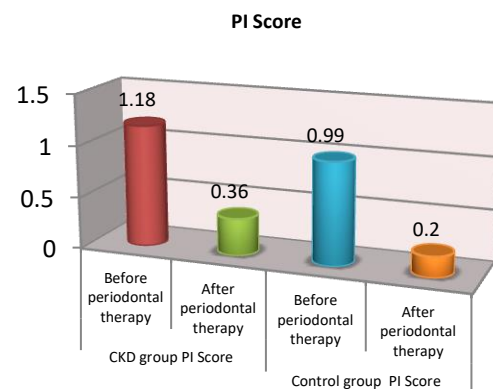


Fig.6 Evolution of plaque index before and after treatment

In the present study, CP was more severe in patients with CKD than in patients without systemic disease. Moreover, at 3 months after periodontal treatment, we noticed a significant reduction in clinical indices CAL and PPD, both of which were markers of PC severity, thus confirming the success of treatment. It can be said that periodontal treatment improved plaque and bleeding scores and reduced probing depths ($p \leq 0.002$) especially in patients with CKD. Patients with periodontal disease appear to have more frequent changes in renal

function.[10,11,17,21] According to a study by Kshirsagar et al., 2005, a significant sign in gingivitis-affected patients is the decrease in glomerular filtration (GFR) compared to the rate of filtration at patients without periodontal disease.[12,18,19,20]

Conclusions. Considering that chronic inflammation is a risk factor for atherosclerotic, cardiovascular disease in patients with hypertension and diabetes, the main causes of CKD, it is plausible that the immediate diagnosis of periodontal disease followed by periodontal therapy should be

an important measure of prevention in chronic kidney disease in everyday clinical practice. The dental and periodontal condition of patients with CKD is often comparable to that of healthy patients, but worsens with time and dialysis. It can be said that maintaining oral health is extremely

important in this type of patient. They also need to be informed about possible complications or aggravations of oral health, as well as the need for urgent communication with the dentist, if they fail to maintain optimum hygiene status.

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