

**Republic of Iraq
Ministry of Higher Education
And Scientific Research
University of Baghdad
College of Dentistry**



**Biological therapy for patients with rheumatoid
arthritis and its effect on periodontal and
immunological parameters**

A Thesis

Submitted to the council of the college of
dentistry/university of Baghdad in partial fulfillment of
the requirement for the award of the degree of Master of
Science in Periodontics

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Abstract

Background: Rheumatoid arthritis and periodontitis are both chronic inflammatory diseases, which demonstrate similarities in terms of mechanism, histopathology, and demography.

Aims of the study: This study aimed to determine the effect of anti_tumor necrosis factor alpha biological therapy(methotrexate and Enbrel or infliximab) on the periodontal health status in patients having Rheumatoid arthritis with chronic periodontitis and compare it with those having chronic periodontitis only and the control group and to determine the serum level of tumor necrosis factor-alpha and Anti-cyclic citrullinated peptide among the study groups.

Materials and methods: The samples in the current study consisted of seventy five subjects include both genders (male and female) with an age range of (30-60) years. They were divided into three groups: - 1-Rheumatoid Arthritis with Chronic Periodontitis), included 25 patients had rheumatoid arthritis with chronic periodontitis and were routinely received anti-TNF- α therapy combined with methotrexate. 2. Chronic Periodontitis group: included 30 persons who had chronic periodontitis only. 3-Control group: included 20 healthy persons. Periodontal parameters used in this study were plaque index , gingival index, bleeding on probing and clinical attachment level and Serum levels of tumor necrosis factor-alpha and Anti-cyclic citrullinated peptide was estimated by enzyme-linked immunosorbent assays .

Abstract

Results: The current data revealed that the median value of plaque and , gingival indices was higher in the CP group than in rheumatoid arthritis with periodontitis group while CAL was slightly higher in rheumatoid arthritis with periodontitis group than chronic periodontitis group. The percentage of BOP sites were higher in chronic periodontitis than rheumatoid arthritis with periodontitis . The median level of tumor necrosis factor-alpha in the CP group was elevated in comparison to that in rheumatoid arthritis with periodontitis and healthy control groups with significant differences ($p < 0.05$). There was a significant negative correlation between serum tumor necrosis factor-alpha and bleeding on probing ($p < 0.05$) in the rheumatoid arthritis with periodontitis group.

The serum level of anti-cyclic citrullinated peptide was found to be higher in the chronic periodontitis group (601.846) followed by rheumatoid arthritis with Chronic periodontitis, which had the lowest median (163.99), while the median of Anti-cyclic citrullinated peptide e control group was (218.617), and the result was statistically non-significant difference between the study groups $p > 0.05$. There was no correlation between anti-cyclic citrullinated peptide and clinical periodontal parameter in each group except in gingival index, bleeding on probing of chronic periodontitis group as there was significant correlation.

Conclusion: Patients with RA receiving biological treatment had lower TNF- α serum level, anti_cyclic citrullinated peptide antibody and lower periodontal indices when compared with the other patient that not taking biological therapy. Thus, suppression of pro-inflammatory cytokines might have a beneficial effect in reducing inflammatory activity in rheumatoid arthritis disease and in minimizing the periodontal destruction of chronic periodontitis.