

**Republic of Iraq
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College of Dentistry**



Evaluation of the Effectiveness of Coenzyme Q10 Gel in Management of Patients with Chronic Periodontitis

A Thesis

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of the degree of Master of Science in Periodontics**

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Abstract

Background: Periodontal pathogens can induce free radicals over-formation and thus may cause collagen and periodontal tissues destruction. Anti-oxidants are used as supplements to counteract the over production of free radicals in periodontal disease, that can reduce collagen destruction. Coenzyme Q10 serves as an endogenous antioxidant, regenerates other antioxidants, stimulates cell growth, and inhibits cell death. Because it is an antioxidant, coenzyme Q₁₀ has received much research attention associated with periodontal diseases. Perio Q gel may possibly be effective as a topical agent and as an adjunct to scaling& root planing in treatment of gingivitis and chronic periodontitis.

Aim of study: This study was conducted to evaluate the effect of intra pocket application of perio Q gel (coenzyme Q10) alone & as adjunct to scaling, root planing on the periodontal clinical parameters which (Plaque index, Gingival index, Bleeding On Probing, Probing Pocket Depth, and Relative Attachment Level) in the management of patients with chronic periodontitis.

Materials and methods: A total of 323 sites with Probing pocket depth (5-8) mm of 15 patients with chronic periodontitis were randomly divided to three groups. The Gel group, 111 sites were treated with intra-pocket application of Perio Q gel alone. In the Combination group, 106 sites were treated with scaling and root planing (SRP) plus intra- pocket application of Perio Q gel, in Scaling and root planing group, 106 sites were treated with scaling and root planing alone. Clinical periodontal parameters [Plaque index (PLI), Gingival index (GI), Bleeding on probing (BOP), Probing pocket depth (PPD) & Relative attachment

level (RAL)] were assessed at the time of application of the gel in 1st visit, 2nd visit (3weeks) and 3rd visit (6weeks).

Results: On intra-groups analysis, all groups showed highly significant reduction in PLI, GI, BOP, PPD and RAL between each pairs of visits. On inter-groups analysis, the results showed a significant reduction in the clinical periodontal parameters PPD and RAL of combination group in comparison to SRP group.

Conclusion: The results of the research were encouraging and suggested the possibility to use the gel as a sole agent to support standard treatment procedures in periodontitis. The clinical periodontal parameters significantly improved, indicating that (CoQ10) opens new treatment options by improving the clinical response to disease activity.