Scaling and Root Planing with Local Synthetic 2 Complex Injection Versus Scaling and Root Planing in the Treatment of Chronic Periodontitis
(A comparative Clinico-Radiographical Study)

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"Abstract"

Periodontal disease is regarded as a range of different diseases, for which some individuals are at relatively high risk.

The Synthetic 2 complex (S2) is a chemical preparation of a low molecular weight, synthetic organometalic complex, which has been tested in many researches to prove its activity in the treatment of malignant tumors, without any side effects with low dose. This drug is a potent immunomodulator that stimulates both, the humoral and cell mediated immune responses.

The purpose of this study was to examine the effect of S2-complex administered locally in conjunction with scaling and root planing (SRP), in patients with chronic periodontitis versus SRP alone clinically and radiographically.

Thirty six pairs of similarly involved periodontal pockets in twenty patients aged between (30-50) years old with pocket depth more than 6 mm were selected. Split mouth randomized study was carried out. Scaling and root planing were carried out in both sides. Test side was received S2-complex for five days in a daily dose of 0.1 ml/kg b.w injected deeply until it reaching the alveolar bone of affected site, while the control side was received distilled water for 5 days in a daily dose of 0.1 ml/kg b.w injected in the same way as that for the test side. S2 complex was infiltrated locally through the gingival tissue of the affected site deeply until reaching the defect bone using disposable insulin syringe. Plaque index, bleeding on probing, gingival index, probing pocket depth, clinical attachment level were recorded at a baseline and repeated once every 2 weeks. Periapical radiographs were taken for both test and control sides at baseline and at the termination of the treatment after 2 months.

Throughout the time of study the patients put on a program of motivation to keep a good oral hygiene.

Results showed that clinical and radiographical parameters in general showed improvement with both test and control groups, with a statistical significant difference between them.

There was a reduction during follow up in the plaque index for both groups of treatment with no significant differences , but there was high statistical significance when comparing between the first and last visit of the same group. Mean score was (2.3889) for the first visit, while (0.055) for last visit of test group , and mean score was (2.3333) for the first visit, while (0.083) for the last visit of control group.

There was a high reduction in gingival index for test group comparing with control group. At last visit mean score was (0.2778) for the test group, while (1.8333) for the control group.

The greatest reduction in bleeding on probing was shown at visit 2 for the test group, while at visit 4 for control group of treatment . CHI square was (41.66%) for the visit 2 of test group , while was (69.44%) for the visit 4 of control group.

The effect of treatment of the test group on the probing pocket depth revealed higher improvement than that of the control group. Mean score was (4.5139) for the last visit of test group , while (6.0833) for the control group.

There was a high improvement in the clinical attachment level from the baseline in both groups, but statistically , there were high differences between them. Mean score was (5.0000) for visit 1while (2.7917) for visit 5 of test group , but (5.0278) for visit 1, and (4.333) for visit 5 of control group.

The twenty patients had been taken already a full mouth radiographs for each of them in the five visits in total of 70 periapical dental film in each visit.

Radiographs, showed difference in height and density of alveolar bone in between V1 and V5 visits. The examination of alveolar bone height by using vernier and cementoenamel junction (CEJ) was used as reference point using magnifying lens and dental viewer. At last visit mean score was (2.8333) , (1.6667) ,(1.6667) for anterior , premolar and molar of test group , while (1.4167) , (0.6667) , (0.5833) for control group at same region respectivily .

The density of alveolar bone based by using aluminum steep wedge of 10 degree with 1 mm difference in between the steeps depending on 6-stage resembling the density of alveolar bone and by using magnifying lens and viewer . At last visit mean score was (6.500) , (5.833) , (6.500) for anterior , premolar , and molar of test group , while (7.917) , (7.250) , (7.083) for control group at same region respectivily .

The height and density of alveolar bone had been noticed and in premolar sites they gave more response to local effect of S2-complex than the anterior and molar sites.