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Efficacy of Moringa Oleifera as a Local Drug Delivery agent in the treatment of chronic periodontitis: A Randomized Controlled Trial

By

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ABSTRACT

Background & Objectives:

Local drug delivery (LDD) devices are designed to deliver drugs directly into the periodontal pocket without any systemic adverse effects. Herbal extract-based LDD agents have been widely tried as therapeutic adjuncts to mechanical debridement in the treatment of periodontal disease. Plant extracts of turmeric, aloe, neem and *Moringa oleifera* have anti-inflammatory, antimicrobial, and antiseptic properties. This study aimed to develop chitosan chip with MO and chitosan chip without MO for the treatment of chronic periodontitis and evaluate its efficacy.

Methods:

LDD chips were made with 2% chitosan and PEG400. Total 38 sites of chronic periodontitis patients received LDD chips with MO and another group of 38 sites received LDD chips without MO. All clinical parameters were assessed at baseline, at 1 month and 3 months. Radiographic alveolar bone levels were assessed at baseline and at 3 months, in Group I only.

Results:

The results of our study had shown more reduction in PI, GI, mSBI at 1 month and 3 months in Group I (chitosan with MO) than Group II (chitosan without MO). There was improvement in PPD and RAL in chitosan chip with *Moringa oleifera* when compared to chitosan chip

without *Moringa oleifera*. Statistically significant improvement in the bone level at 3rd month when compared to baseline in Group I only.

Conclusion:

Moringa oleifera as LDD agents showed an effective improvement of clinical and radiographical parameters and could act as a promising natural agent with potential applications in treating periodontal diseases.

Keywords: *Moringa oleifera*, Chitosan, Chronic periodontitis, Local Drug Delivery

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