

Clinical and Microbiological Effect of Minocycline-Loaded Polycaprolactone Film on Rapidly Progressive Periodontitis

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The local route of antibiotic administration can accomplish higher therapeutic doses in subgingival sites than those possible by systemic therapy. This investigation assessed on the clinical and microbiological effect of 30% Minocycline loaded polycaprolactone film (Mino-strip) on rapidly progressive periodontitis. Mino-strip was applied in the periodontal pockets of 15 patients with clinically diagnosed as a rapidly progressive periodontitis. 8 sites for each patient with a 5mm probing pocket depth were selected in split mouth design and were assigned into group. I.E., placebo (group 1), supragingival scaling and R/P (group 2). Mono-strip applied only (group 3), R/P and Mino-strip applied (group 4). Supragingival scaling and oral hygiene instruction were performed 1wk before experiment. Mino-strip was applied weekly on day 0 and 7. Clinical and microbiological test were performed on day 0, 7, 14, 28, 56. In R/P and Mino strip applied group, Gingival index, GCF volume, probing depth and loss of attachment level were significantly reduced after the first weeks following treatment. In R/P and Mino-strip applied group, the relative proportions of spirochetes and motile rods were significantly reduced and the proportions of cocci and non motile rod were correspondingly increased for eight weeks following treatment. In R/P and Mino-strip treated group, total anaerobic and aerobic bacterial count were significantly decreased for the first two weeks following treatment and streptococcus count was decreased for eight weeks following treatment. In R/P and Mino-strip applied group, *P. gingivalis*, *P. intermedius*, *B. forsythus*, *A. actinomycetemcomitans*, *F. nucleatum*, *E. corrodens*, *C. rectus* counts were significantly reduced after the first week following treatment.

According to this study, it is appeared that 30% Minocycline-loaded polycaprolactone film was effective in the treatment on rapidly progressive periodontitis.