

The Effects of Tetracycline HCL and Chlorhexidine on the Growth and Viability of Cultured Human Fibroblasts

Abstract :

Tetracycline and chlorhexidine have been widely used in subgingival debridement in order to reduce the microbial flora in patients that did not respond favourably to conventional therapy. The present study utilized human fibroblasts (periodontal ligament cells) derived from healthy explants, to test the effects of tetracycline and chlorhexidine on their vitality, growth and cell number. Both drugs had a suppressor effect on the number of fibroblasts. The results indicated that 0.12% and 0.002% chlorhexidine were cytotoxic to the cells with a direct correlation to the concentration, while the tetracycline was less toxic, at the lower concentration (50mg/ml) the inhibitory effects was less statistically significant than the higher concentration. These findings are important in the clinical assessment of the two subgingival irrigators, and indicate that lower doses but still maintaining their efficacy are more favourable in order not to affect the vitality of the fibroblasts and hence cell attachment and spreading.