
The Severity Of Gingival Enlargement Induced By Cyclosporin-A And Nifedipine.

An experimental study in rabbit

A Thesis

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Abstract

The present study was undertaken to estimate the severity of the gingival enlargement induced by CsA and Nifedipine separately and in combination , in addition to the effects of the drugs on the periodontium of the studied animals through clinical and histological evaluation .

Forty- two adult rabbits with age range between 8-12 months, and an average weight of (2kg \pm 250 gm), were used in this study . In the first experiment 30 adult rabbits were divided equally into 3 main experimental groups , each experimental group contained 10 adult rabbits (5 males and 5 females) , the first experimental group received 10 mg /kg/day Nifedipine , the second experimental group received 10 mg / kg /day CsA ,and the third experimental group received 10 mg / kg / day Nifedipine **in addition** to 10 mg / kg / day CsA, by gastric feeding using a disposable syringe, from day 1 till day 70 then all drugs were stopped, till the end of the experiment on day 110.

Alginate impressions were taken for the anterior segments of the maxilla and mandible for each animal on the days 0,30,70,90 and 110 , then the gingival enlargement was assessed on stone study models according to Seymour's method .

In the second experiment , 12 adult rabbits, were divided equally into 4 main Histological groups , each histological group contained 3 adult rabbits, the first histological group received 10 mg /kg/day Nifedipine , the second histological group received 10 mg / kg / day CsA , the third histological group received 10 mg / kg / day Nifedipine **in addition** to 10 mg / kg / day CsA , by gastric feeding , the forth histological group received no drug and was regarded as a control group . Animals were given the drugs from day 1 of the experiment till day 70 then they were all sacrificed for histological purposes, specimens were prepared for sectioning and staining with hematoxylin and eosin and then they were examined under the light microscope.

The clinical results revealed the appearance of whitish gingival margin and interdental papilla at the labial aspect of the lower anterior region in the experimental groups, in addition to the appearance of lower anterior diastema in some rabbits of the CsA and the combination experimental groups, and were persistent along the experimental period.

Results of the gingival enlargement, revealed a highly significant differences in the mean values of the gingival enlargement scores in the experimental group that received both CsA and Nifedepine , compared to the experimental groups that received either CsA or Nifedipine . And a highly significant differences in the mean values of the gingival enlargement scores were observed in the experimental group that received

CsA compared to the experimental group that received Nifedipine on day 70 of the experiment.

Also Significant differences in the mean values of the gingival enlargement scores were observed in the maxillary arch on day 70 compared to the mandibular arch, in all studied animals .

Statistically, no significant differences in the mean values of the gingival enlargement scores were observed in the males animals compared to the females animals, although males showed higher means in the gingival enlargement scores compared to the females animals.

Drugs withdrawal showed partial regression in the mean values of gingival enlargement scores in the three experimental groups at the end of the experiment.

The results of the histological examination , showed an increase in the thickness of the epithelium with keratosis and acanthosis, with increased vascularity, collagen fibers and fibroblasts at different rates in the three histological groups, in addition to Significant alveolar bone resorption with increased marrow spaces filled with fatty tissue in the CsA group, compared to a non significant changes in the alveolar bone of the Nifedipine group . While subsequent bone resorption and bone deposition was seen in the combination group due to the effect of both drugs .