

عنوان مقاله:

The Synergistic effect of Vitamine D and Prostaglandin E₂ On Orthodontic Tooth Movement in Rats

محل انتشار:

دوفصلنامه ارتودنسی ایران، دوره 8، شماره 1 (سال: 1392)

تعداد صفحات اصل مقاله: 14

نویسندگان:

Massoud Seifi - *Professor Dentofacial Deformities Research Center, Research Institute of Dental Sciences and School of Dentistry, Shahid Beheshti University of Medical Sciences*

Roya Hamed - *Postgraduate Student of Orthodontics, DDS, Dental Research Center, Research institute of Dental Sciences of Shahid Beheshti University of Medical Sciences, Tehran, Iran*

Maryam Nazirii - *Dentist, Tehran, Iran*

خلاصه مقاله:

Background and aim: Orthodontic tooth movement requires remodeling of periodontal tissues, especially alveolar bone. A major objective of investigators is to achieve maximum tooth movement with minimal root damage. The aim of this study is to determine if the rate and amount of orthodontic tooth movement in a sample of rats could be enhanced by the injection of a vitamin D metabolite and Prostaglandin E₂. Materials and Methods: Thirty-Two male Wistar rats were randomly divided into 4 groups of eight rats each: 1- 1.5 IU/ml vitamin D was injected into the thigh muscle after installation the orthodontic appliance in first group (Vit D group) 2- 0.1 ml of 1 mg/ml PGE₂ was injected submucosally in the second group (PGE₂ group). 3- In the third group, 1.5 IU/ml vitamin D and 0.1 ml of 1 mg/ml PGE₂ was injected submucosally (Vit D+ PGE₂). 4- Distilled water (0.1 ml) was used in control group. In order to calculate the tooth movement; the distance between the upper right first and second molars was measured. Results: All groups have a significant difference with control group ($p < 0.05$). The most mean OTM was observed in the Vit D+PGE₂ group (Mean = 0.70 ± 0.0489 mm) that was significantly higher than the Vit D, PGE₂ and control groups ($P < 0.05$). A significant difference ($P < 0.05$) in root resorption was observed between the PGE₂ (0.0192 ± 0.000675 mm²) and the other groups. Conclusion: In order to achieve a decrease in root resorption and an increase in OTM, the combination Vit D+PGE₂ is useful and there is a synergism effect with Vit D and PGE₂.

کلمات کلیدی:

Prostaglandin E₂, Root Resorption, Tooth Movement, Vit D

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1400037>

