Effect of sea coral implantation on chromosomes in rabbits

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The effect of caffeine on osteoblast proliferation after tooth extraction in Wistar rats

The effect of caffeine on osteoblast proliferation after tooth extraction in Wistar rats

1. Budi Yuwono --Department of Oral Surgery, Faculty of Dentistry Jember University Jember - Indonesia

Abstract

Caffeine is the most well-known substance which consumed by most people daily. Behind its popularity as favorable drinks and food, this substance also known can inhibit the post extraction wound healing by decreasing the proliferation of osteoblast cells through the increase of intracellular cyclic Adenosine Mono Phosphate (cAMP). The objective of this study was done to observe the effect of caffeine intake toward the number of osteoblast cells during the wound healing of post dental extraction in Wistar’s rats. This study was an experimental laboratory research and the post test-only control group design was used for the statistical evaluation. The samples used were 24 healthy 3 months old male Wistar’s rats, with approximately 200 grams of body weight and divided into 4 groups. Three groups were taken and represented as a treated group (P) and the rest of one group was used as a control group (KO). Caffeine diet with a dosage of 3.78 mg/100 ml grams of body weight/cc was given for 7 days in group P1, P2 for 14 days, and 21 days in group P3 and the diet was given orally using an oral sonde. Teeth extractions of the right first molar in the lower jaw were done in all groups according to the interval time had been scheduled. Seven days of post-extraction time was waiting in all groups before the sample being decapitated for further histological examination in the post extracted sites. A Hematoxillin and Eosin staining was used and the number of osteoblast cells were counted under light microscopy with 400 times magnification. One-way ANOVA and Least Significant Difference (LSD) test were used for the statistical evaluation. The result of the study shown a significant decrease of the number of osteoblast cells in caffeine consumed group of 7, 14, and 21 days observed (p

Keyword : caffeine, osteoblast, healing, ,

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