Effect Of Soybean Extract After Tooth Extraction On Osteoblast Numbers

Abstrak:

Background: Many researches were done to find natural materials that may increase and promote bone healing processes after trauma and surgery. One of natural material that had been studied was soybean extract which contains phytoestrogen, a non-steroidal compounds found in plants that may binds to estrogen receptors and have estrogen-like activity. Purpose: The aim of this study was to investigate the effect of soybean extract feeding on the number of osteoblast cells in alveolar bone socket after mandibular tooth extraction. Methods: This study was studied on male Rattus norvegicus strain Wistar. Seventeen rats divided into three groups were used in this study. Group 1 fed with carboxy methyl cellulose (CMC) solution 0,2% for seven days, and the left mandibular central incisivus was extracted; group 2 fed with soybean extract for seven days and the left mandibular central incisives was extracted; group 3 received the left mandibular central incisives extraction followed by soybean extract feeding for seven days after the extraction. All groups were sacrificed on the seventh day post-extraction, and the alveolar bone sockets were taken for histopathological observation. The tissues were processed and stained using hematoxylin and eosin to identify the amount of osteoblast cells. The number of osteoblast cells was counted using an Image Tool program. The data was analyzed statistically using the One-Way ANOVA test. Results: Significant differences were found on the number of osteoblast cells in alveolar bone after tooth extraction between groups. Group 2 (fed with soybean extract) is higher than group 1 (fed with CMC) and group 3 (fed with soybean extract after extraction). Conclusion: Soybean extract feeding that given for seven days pre-tooth extraction can increase the number of osteoblast cells compared with the group that were not given soybean extract feeding and also with the group that were given soybean extract feeding for seven days post-tooth extraction.

Keyword: Tooth extraction, soybean extract, phytoestrogen, osteoblast