THE EFFECT OF CIRCADIAN RHYTHM ON OSTEOBLAST COUNTS IN MARMOT’S (Cavia cobaya) ALVEOLAR BONE POST SEPARATOR ATTACHMENT

ABSTRACT

Background: Light is one of the most important external stimuli in circadian rhythm. The light-dark cycle environment could affect the secretion of melatonin from the pineal gland. Change of melatonin secretion could affect bone remodelling by increasing osteoblast counts. Purpose: The aim of this study is to find the effect of circadian rhythm in osteoblast counts in alveolar bone. Methods: Marmots (Cavia cobaya) were classified into three groups: control group (12 Hours Light:12 Hours Dark/12HL:12HD), constant light/24 Hours Light (24HL) group and constant dark/24 Hours Dark (24HD) group. Marmots are given light-dark stimulus for 15 days. Later on, tooth separator were inserted in the marmots’ upper teeth together with light-dark stimulus for 7 days. Osteoblast counts were measured after staining with Masson Trichrome. Results: There is only inactive osteoblast and there is no significant difference between each group (p>0.05). Conclusion: Circadian rhythm does not have effect in osteoblast counts in alveolar bone.

Keywords: Circadian rhythm, melatonin, osteoblast counts