

ABSTRACT

Effect Salmon Calcitonin and Submaximal Exercise on Bone Density in Growing Rat

Bone mineralized always increase and decrease though the remodelling process. Remodelling bone consists of two processes, bone formatted by osteoblast and bone resorption by osteoclast. Growing period is the best period to increase bone density. The research purpose was to prove submaximal-intensity exercise and salmon calcitonin effect in the bone density. This research method used design of the randomize post test only control group design. We compered femur bone density in 24 male norvegicus rats aged six weeks that were devided into four groups: controls, calsitonin, exercise, combine. Exercise group swam once a day and three times a week, calsitonin group was given synthetic salmon calcitonin injection 2 IU/100gram of rat weight everyday and combine group was treated both of exercise and calcitonin injection. After eight weeks, rat femur bone density measured using ultrasound and bone mass measured using analytical balance, length and diameter bone measured using vernier caliper. The result was the combine had higher bone density ($p=0,001$) and bone mass ($p=0,004$) compare to other groups and no effect in leght bone and diameter bone. The conclusion was the combination of exercise and salmon calsitonin can increase bone density and bone mass in growing rat.

Keywords: *submaximal exercise, calcitonin salmon, bone density.*