ABSTRACT
THE EFFECT OF HYPERCHOLESTEROLEMIA ON CORTICAL BONE THICKNESS OF WISTAR RATS (Rattus norvegicus)

There are several studies reporting the effect of hypercholesterolemia on cortical thickness, but it remains controversy. Some studies suggest that hypercholesterolemia can decrease osteoblast activity and increase osteoclast activity. While other studies suggest that hypercholesterolemia is protective factor of osteoporosis. Therefore, it was necessary to conduct a study to determine the effect of hypercholesterolemia on cortical bone thickness. This study used 8 rat (Rattus norvegicus) that were divided into 2 groups. untreated group (K0) that given standard feed and treated groups (K1) that given high fat feed for 28 days and killed to take the femur bone then measure the bone thickness using software Optilab Viewer and Optilab Image Raster. The data analysis used independent t-test. Test result are considered significant when p<0.05. The result showed that hypercholesterolemia had significant effect on cortical bone thickness. The average cortical bone thickness in the control group was 146.92 μm whereas in the high-fat-fed group 124.53 μm, the mean difference between the two groups was 22.39 μm. There was a decrease of cortex bone thickness by 6%. It was conclude hypercholesterolemia can decrease cortical bone thickness of wistar rats (Rattus norvegicus).

Keywords: Hypercholesterolemia, cortical bone thickness