ABSTRACT

DENSITY AND THICKNESS DIFFERENCES DUE TO BISPHOSPHONATE WITH AND WITHOUT CALCIUM APPLIED ON WHITE MALE RATS (Rattus norvegicus strain Wistar)

Background: Osteoporosis is a metabolic bone disease characterized by reduced bone mass. Prevention of osteoporosis should be done early to young-adulthood in order to achieve peak bone mass. If the condition reached peak bone mass in young-adulthood, the possibility of osteoporosis in the elderly will decreasing. Resorption on bone can be prevented by using bisphosphonate that can stimulate osteoblast and inhibit osteoclast work. Calcium helps osteogenesis process by increasing bone mineral deposition The use of bisphosphonate is not enough without balanced by calcium intake. Purpose: This study is to know density and thickness differences due to bisphosphonate with and without calcium applied on white male rats. (Rattus norvegicus strain Wistar). Method: This study is done to male Rattus norvegicus strain Wistar 8-12 weeks, weighing about 150-200 gr, and in good condition by bisphosphonate with and without calcium lactate for 4 weeks. Result: There is difference growth in bone density and thickness with bisphosphonate applied between group with bisphosphonate in combination with calcium and control group. This may be due to excessive consumption of calcium (hypercalcemia) that causes resorption. Conclusion: This study can be concluded that effect of bisphosphonate applied provide a greater effect on bone density and thickness accretion than combined with calcium in normal rats (non-osteoporosis)

Keyword: bisphosphonate, calcium, density, thickness, osteoporosis