ABSTRACT

Osteoporosis; the major health problem is an imperative disease requires a significant attention to discover different aspects of this threatening abnormality. There are some problems in osteoporotic human population to conduct researches such as lack of a homogenous sample size or ethical problems. So, there was a need to have protocol in animal model to let the scientists discover various feature of this disease to promote health status of the human population. The aim of this research was to make such protocol in animal model. Approach: About 15 rabbits were utilized in the current research. Six animals of Group 1 have undergone bilateral ovariectomy which was followed by IM injection of 1 mg kg-1 day of methylprednisolone. Six rabbits of second group only undergone bilateral ovariectomy and three animal of Group 3 served as a control group. They neither undergone any surgery nor received any medications. After surgery up to four weeks radiographs were taken. At week four animals were euthanized and samples of cortical and chancellors' bone were evaluated by light and scanning electron microscopes. Results: Group 1 completely manifested features of osteoporotic bone. Complete radiolucent view with cortical thinning in radiographs as well as broken, thinned and perforated chancellors bone trabecullae in light and electron microscope confirmed the osteoporotic nature of both cortical and chancellors' bone. Ovariectomy alone did not show sufficient potential to induce osteoporosis in rabbits in such short period. Conclusion: As the conclusion, bilateral ovariectomy following injection of mild doses of glucocorticoids could result in a fast, easy and trustable protocol to induce osteoporosis in rabbit model. This procedure could be utilized in creating osteoporotic rabbits for better understanding of unknown aspects of the recent growing syndrome.

Keyword: Osteoporosis; Glucocorticostroids; Bone mass; Rabbit.