AN EVALUATION OF OSTEOPOROSIS PREVALENCE IN SPINAL CORD DISABLED VETERANS

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Introduction: Osteoporosis and bone fracture risk due to decrease in bone mineral density is known as one of the most important complications of chronic spinal cord injuries (SCI). It also is a major health problem among the patients in SCI society. Although immobilization, old age, menopause and some comorbidities, are major causes, other important factors also should be taken into consideration.

Materials & Method: In this cross-sectional study, 132 veterans with SCI (mean of age 37.4 years), underwent dual-energy X-ray absorptiometry (DEXA), by LUNAR, to define bone mineral density (BMD) in 2nd to 4th lumbar vertebrae and the neck of right femur (g.cm²) and obtain some essential data such as level of injury, period of injury, daily exercise and spasticity were recorded and analyzed.

Results: The investigation of the femoral neck showed that 81.5% of subjects suffered from osteoporosis and 13.1% from osteopenia. Evaluation of lumbar spine also showed that 16.7% suffered from Osteoporosis and 18.2% from osteopenia. A significant difference was observed between vertebral bone density (mean 1.23 g/cm²) and the neck of right femur (mean 0.66 g/cm²). It was also found that there is a slight negative correlation between bone density and risk of bone fracture (in vertebrae and femoral neck). Reduction of each 0.1 g of bone density increases the risk of bone fracture up to 53.9% in the femoral neck and 27.7% in lumbar vertebrae.

One unit decrease in T-Value increases fracture risk about 1.43 and 0.26 in the femur neck and lumbar vertebrae, respectively. The findings indicated that there is no significant relation among bone density, age, level of injury spasm, occupation and post-injury period. Moreover, there was a slight negative correlation between weight and bone mineral density. However, positive correlation exists between height and bone mineral density.

Keyword: OSTEOPOROSIS, OSTEOPENIA, BONE MINERAL DENSITY (BMD), DUAL-ENERGY X-RAY ABSORBTHIOMETRY (DEXA), VETERANS WITH SPINAL CORD INJURY
Reference:
