REGIONAL OSTEOPOROSIS IN THE SPINAL CORD OF DISABLED WAR VETERANS

Hossein Gholizadeh

Available at: https://works.bepress.com/hossein_gholizadeh/19/
Introduction: Osteoporosis, the result of an imbalance between bone resorption and bone formation, is a potential problem for patients with spinal cord injury (SCI) because of immobility commonly associated with this impairment. Bone mineral content decreases by 25% to 50% and the magnitude of this reduction is dependent on the level, completeness and duration of SCI. This study was designed to evaluate osteoporosis in war veterans with SCI in Isfahan province.

Methods: In this cross-sectional study, by use of a cluster sampling frame, SCI veterans underwent dual-energy X-ray absorptiometry (DEXA) to define bone mineral density (BMD) in 2nd to 4th lumbar vertebrae and the neck of right femur (g.cm2).

Results: The study on the femoral neck showed that 94.6% of subjects suffered from abnormal bone mineral density (84.9% osteoporosis and 15.1% osteopenia). Evaluation of lumbar spines also showed that 34.9% of veterans suffered from low bone mineral density (52.2% osteoporosis and 47.8% 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) (P<0.05). Comparing the results in paraplegics and quadriplegics reveals no significant difference between bone density in the femoral neck and lumbar spines (P>0.05). Also, bone density was shown to have no significant relation with age, level of injury, post-injury period and exercise (P>0.05). However, a slight correlation was seen between weight and bone mineral density.

Discussion: During spinal cord injury, bone mineral density in, the lumbar vertebrae is reserved significantly better than in the femoral neck.

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