Comparison of bone mineral density between residents of a mountain village and a fishing village in gyeongnam targeted above 50 year-old postmenopausal women

Won-Jun Choi1,2, Jeong-Kyu Shin1,2, Soon-Ae Lee1,2, Jong-Hak Lee1,2, Won-Young Paik1,2

1Department of Obstetrics and Gynecology, School of Medicine, 2Institute of Health Science, Gyeongsang National University, Jinju, Korea

Objective: The purpose of this study was to compare the differences in bone mineral density (BMD), T-scores, and the prevalence of osteopenia and osteoporosis between residents of a mountain village (group A) and a fishing village (group B). Methods: Four hundred fifty-one postmenopausal women (138 women in group A and 313 women in group B) were examined, including women > 50 years of age. The study subjects were recruited from the women who had received care at the health examination center of our hospital between January 2005 and September 2009. The BMD was measured at lumbar 1-4 by dual-energy X-ray absorptiometry. Results: The average BMD of the lumbar spine in group B was higher than group A (0.959 g/cm² vs. 0.996 g/cm², *P*=0.011). The average T-score of group B was also higher than group A (-1.31±0.10 vs. -0.98±0.07, *P*=0.008). The prevalence of osteopenia in group A was higher than group B (55.8% vs. 39.0%, *P*=0.001); however, the prevalence of osteoporosis between the two groups was not significantly different. Conclusion: The higher BMD value in the lumbar spines of the fishing village residents may be attributed to more calcium, vitamin D, vitamin K1, and omega-3 fatty acid intake from sea foods, which is beneficial for bone formation. In addition, fishing village residents have greater exposure ultraviolet, which increases biosynthesis of vitamin D in the skin.