

Bone Mineral Density in Long-Living Patients with Coronary Artery Disease

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Abstract : Introduction: Limited data are available on osteoporosis in centenarians. Therefore, we evaluated bone mineral density in long-living patients with coronary artery disease (CAD). Methods: 202 patients hospitalized with CAD were enrolled in this cross-sectional study. The patients' age ranged from 90 to 101 years. The majority of study participants (64.4%) were women. The main exclusion criteria were any disease or medication that can lead to secondary osteoporosis. Bone mineral density (BMD) was measured by dual-energy X-ray absorptiometry. Results: Normal lumbar spine BMD was observed in 40.9%, osteoporosis - in 26.9%, osteopenia - in 32.2% of patients. Normal proximal femur BMD values were observed in 21.3%, osteoporosis - in 39.9%, and osteopenia - in 38.8% of patients. Normal femoral neck BMD was registered only in 10.4% of patients, osteoporosis was observed in 60.4%, osteopenia in 29.2%. Significant positive correlation was found between all BMD values and body mass index of patients ($p < 0.001$). Positive correlation was registered between BMD values and serum uric acid ($p=0.0005$). The likelihood of normal BMD values with hyperuricemia increased 3.8 times, compared to patients with normal uric acid, who often have osteoporosis (Odds Ratio=3.84; $p = 0.009$). Positive correlation was registered between all BMD values and body mass index ($p < 0.001$). Positive correlation between triglycerides levels and T-score ($p=0.02$), but negative correlation between BMD and HDL-cholesterol ($p=0.02$) were revealed. Negative correlation between frailty severity and BMD values ($p=0.01$) was found. Positive correlation between BMD values and functional abilities of patients assessed using Barthel index ($r=0,44$; $p=0,000002$) and IADL scale ($r=0,36$; $p=0,00008$) was registered. Fractures in history were observed in 27.6% of patients. Conclusions: The study results indicate some features of BMD in long-livers. In the study group, significant relationships were found between bone mineral density on the one hand, and patients' functional abilities on the other. It is advisable to further study the state of bone tissue in long-livers involving a large sample of patients.

Keywords : osteoporosis, bone mineral density, centenarians, coronary artery disease

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