Total Body Bone Mineral Density and Regional Bone Mineral Density in Patients with Prostate Cancer

Introduction and Objective: Considering that the skeleton is the most painful and debilitating site of metastasis from CaP, skeletal screening is crucial in management planning and assessing the prognosis in the early disease state. Aim: To evaluate total body bone mineral density and regional bone mineral density in patients with prostate cancer with and without metastases, and to compare them with bone scintigraphy.
Materials and Methods: There were 540 patients with prostatic carcinoma and 200 healthy subjects who were investigated with bone scintigraphy and dual-energy X-ray absorptiometry. The bone scintigraphic findings were classified as normal (score 0: n = 220), abnormal but not typical for metastases (score 1: n = 180), and typical pattern of metastases (score 2: n = 140).
Results: The patients with bone metastases prostate cancer had significantly higher total bone minera1 density and regional bone mineral density of trunk and pelvis than healthy controls and prostate cancer patients without bone metastases. There was a significant positive correlation between bone scan score and total bone mineral density and regional bone mineral density of trunk and pelvis ($r = 0.328$, $P < 0.05$. $r = 0.60$. $P < 0.001$, $r = 0.480$, $P < 0.001$, respectively).
Conclusions: Bone metastasis is a major cause of morbidity in prostatic cancer. Our results show that patients with prostate cancer with bone metastases have increased bone mineral density (BMD) in the pelvis and trunk, possibly because of a predominance of osteoblastic over osteolytic metastases demonstrated by Tc-99m MDP bone scan.