Diagnostics and Frequency of Osteoporosis in Locally Advanced Prostate Cancer

Introduction and Objectives: Androgen deprivation (AD) is a standard therapy for patients with locally advanced or metastatic prostate cancer (PCa). The long-term side effects of AD include, in particular, development of osteoporosis. Bone changes due to AD for treatment of PCa have not been extensively studied. AD for locally advanced PCa increases the risk of development of bone destruction. Taking this into consideration, it is important to study the frequency and severity of bone disorders in patients with PCa prior to start of the AD.
Materials and Methods: We examined 25 patients (mean age 69.7±7.52) with new diagnosed locally advanced PCa (T ≥3 Gleason score ≥7). The Prostate Specific antigen level varied from 27 to 115 ng/ml. We determined the Ca levels in the blood and urine, the B-Cross Laps, and all patients were subjected to dual-energy densitometry using a Lunar Prodigy Advance unit.
Results: Changes in the bone destruction parameters were found in 15 (60%) patients (osteoporosis (40%) and osteopenia (60%) in 6 and 9 patients, respectively). Bone metastases were found in 2 patients. The densitometry data (T< -4) were determined for 6 patients with osteoporosis. In patients with osteopenia, the T-criterion was also not more than 3.4. The B-Cross Laps values were elevated in all patients with osteoporosis, and in 7 patients with osteopenia (3.6±1.2 mg/mmol), and the Ca blood and urine levels were also elevated, 5.65±3.2 and 4.8±2.5 mmol/ml, respectively.
Conclusion: Osteoporosis and osteopenia occur in most patients with PCa before AD. Early diagnostics and monitoring of bone disorders in males with new diagnosed locally advanced PCa selected for AD are necessary for prevention of the complications related to reduction of the bone density, which develops during AD. This may form the basis for therapeutic strategies aimed at prevention of bone destruction in this group of patients.