

Abstract

Osteoporosis increases the risk of bone fractures. It is diagnosed based on an individual's bone mineral density (BMD) or a fracture without trauma. BMD is usually measured by the dual energy X-ray absorbance (DXA) method. Here we investigated factors for the earliest possible prediction of decreased BMD by examining the relationships between patients' BMD values and changes in the patients' physical and laboratory values. We retrospectively reviewed the medical records of 149 patients who visited our department in 2014–2015 for a variety of reasons and underwent an area BMD examination by DXA. We analyzed the relationships between decreasing BMD and the patients' gender, age, body mass index (BMI), medical background, hemoglobin, electrolytes, and thyroid function. Thirty-nine of the patients were diagnosed with osteoporosis based on their T-scores. An adjusted analysis showed that female gender, aging, and increased serum calcium level were significantly related to decreasing femoral BMD, whereas high BMI was associated with an increase in femoral BMD. Collectively the results indicate that for the early detection of low BMD, it is important for general-practice physicians to consider conducting a BMD checkup when treating female and elderly patients with a low BMI and/or elevated serum

calcium level.