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TCT-383

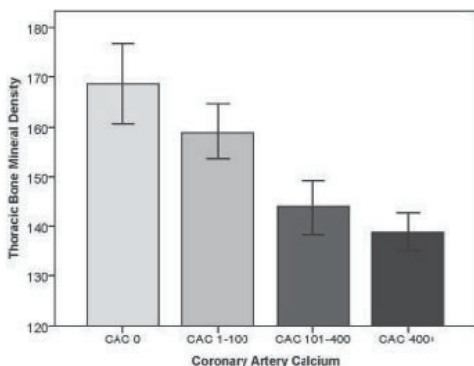
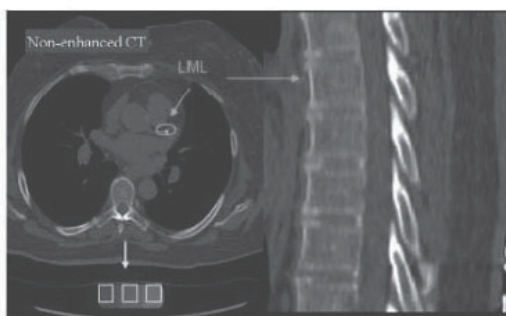
Relation of Bone Mineral Density Loss with the Severity of Coronary Artery Calcium in Maintenance Hemodialysis Patients

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Background: Osteoporosis and atherosclerosis are major public health problems that often coexist in both genders worldwide, particularly in the chronic renal insufficiency. Coronary artery calcium (CAC) is an anatomic marker of burden of atherosclerosis and correlates with the presence and extent of coronary artery disease (CAD) in maintenance hemodialysis patients (MHD). Current study investigates the correlation between CAC and thoracic bone mineral density (BMD) measured by computed tomography (CT) in an MHD population.

Methods: One hundred and sixty six MHD subjects, mean age 53 ±13, 59% male, underwent CT consecutively and their thoracic BMD and CAC were measured. The mean bone mineral density [BMD (mg/cc)] of four consecutive thoracic vertebrae was measured starting at the left main coronary slice level using QCT 5000 (Image analysis, Kentucky). CAC was defined 0, 1-100, 101-400 and 400+.

Results: CAC is inversely associated with BMD ($r = -0.33, p = 0.0001$). BMD decreased proportionally with increasing CAC from CAC 0 (168±34) to CAC 1-100 (159±33) to CAC 101-400 (143±28) to CAC 400+ (138±29) ($p = 0.001$). After adjustment for age, gender and cardiovascular risk factors, the relative risk of BMD per *standard deviation decrease* was 1.5 (95% CI 1.01-2.3, $p = 0.05$) for CAC 1-100, 2.3 (95% CI 1.7-5.8, $p = 0.004$) for CAC 101-400, and 3.1 (95% CI 1.9-6.9, $p = 0.002$) for CAC 400+ as compared to CAC 0, respectively.



Conclusion: This study provides evidence that bone mineral density loss is associated with the severity of subclinical atherosclerosis measured by CAC independent of age, gender and cardiovascular risk factors in MHD population.