Differences in bone mineral density of hip patients screened for osteoporosis. A cross sectional study.

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INTRODUCTION: Osteoporosis is progressive skeletal condition, characterized by a deterioration of the quality and quantity of bone tissue. This condition increases the risk of fractures in older patients. Bone mineral density can be assessed by dual energy x-ray absorptiometry (DXA) of different regions of interest (ROI). The World Health Organization (WHO) defines osteoporosis as 2.5 standard deviation from the reference population at different cohorts. However, different regions of interest in different bones are susceptible to evaluation by DXA. Our purpose was to determine prevalence of osteoporosis in a sample of Mexico by DXA with different ROI of the left hip.

METHODS: After IRB approval we conducted a cross sectional descriptive study in a single center of Tampico, Mexico. In this study we included the first 1000 patients. We determined age, gender, race and BMI. According to WHO standards we measured bone mineral density with DXA of the left hip. We measured BMD of total femur, femoral neck, superior neck, Ward's triangle, trochanteric ROI, osteoporosis diagnosed when values were -2.5 SD from the reference values of the cohort NHANES/BMDCS/Lunar. Dimensional data was expressed in means and SD. Qualitative data was presented in percentages.

RESULTS SECTION: Mean age was 63.4 ± 10.08. Prevalence of osteoporosis considering ROIs of the hip was: femur total 15.9%; femoral neck 28.5%; superior neck 24.8%; Ward's triangle 46.2%, trochanteric ROI 22.3%.

DISCUSSION: Diagnosis of osteoporosis using T values is highly variable within the different ROIs of the hip. It is of great interest continue follow-up to determine risk factors for fractures, progression to osteopenia and osteoporosis, and regression of the disease and prevention of fractures in this population.

SIGNIFICANCE/CLINICAL RELEVANCE: Osteoporosis is a silent disease of global economic burden. This study adheres to the international efforts to understand and improve care of patients to prevent fractures and associated conditions.

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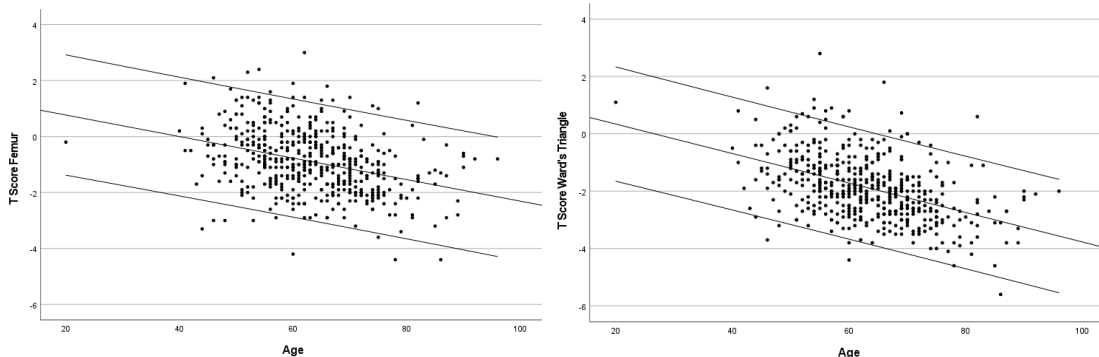
IMAGES AND TABLES:

Figure 1 and 2. Bivariate relationship of T Scores of femurs and Ward's triangle with age of sample of Tamaulipas, Mexico.