CORRELATION BETWEEN QUANTITATIVE ULTRASOUND OF PHALANX AND DXA IN ASSESSMENT OF BONE STRUCTURE IN RENAL TRANSPLANT RECIPIENTS

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Many patients with renal transplantation have osteopenia or even osteoporosis according to WHO definition of osteoporosis. Dual-energy X-ray absorptiometry (DXA), the standard method to assess BMD, is not always available. Quantitative ultrasound (QUS) of phalanx is an inexpensive, mobile, and radiation-free diagnostic alternative. There is few data that address this method's correlation with DXA in patients with renal transplantation. This study assessed the value of QUS in detecting changes in bone structure in renal transplant recipients compared with DXA.

In a cross-sectional study, 42 patients (22 women) with a mean age of 40.2±11.9 years, a mean time since transplantation of 2.8±2.9 years (range, 0.43 to 14.7 years) and a mean dialysis time of 8.55±10.26 months (0-48 months) were studied. DXA method used for bone mineral densitometry of the hip (neck and total) and spine and QUS measured amplitude dependent speed of sound (Ad-SOS) in phalanx. Osteoporosis found in 19% of all patients (9.5% in femoral neck, 9.5% in total region of femur and 9.5% in spinal region). Sensitivity of Ad-SOS for osteoporosis diagnosis in above regions were 100%, 75% and 25%, respectively and its specificity for that diagnosis in above regions were 45%, 43% and 37%, respectively. There was not significant relation between them. QUS of phalanx can be recommended for osteoporosis screening in renal transplanted patients. Those suspected of osteoporosis, should be examined by additional DXA measurement for establishment of diagnosis.