DXA PARAMETERS IN THE ASSESSMENT OF BONE STATUS IN SARCOIDOSIS PATIENTS

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Sarcoidosis is a multisystemic disease of unknown aetiology characterized by the formation of immune granulomas in involved organs. It is a worldwide disease that mainly affects 2540 years old people with a lifetime incidence rate of 0.852.4%.
Long term corticosteroid treatment, which still represent the mainstay of sarcoidosis therapy has been reported to induced bone loss and may cause osteoporosis and pathological fractures. The aim of the present study was to evaluate the ability of DXA in detecting bone impairment and whether there was relationship between DXA parameters and the cumulative dose of glucocorticoids (GCs) in a large population of sarcoidosis patients.
We have studied 95 consecutive sarcoidosis patients (65 women and 30 men). All the patients were being treated with GCs or had been treated with GCs for at least six months at a dose of 7,5 mg/day of prednisone or equivalent. In our study population GCs cumulative dose (CD) ranged from 0.7 gr to 52 gr (mean 14.9±39.9 gr). Ninety five sex and age matched healthy subjects served as controls.
In all subjects we measured bone mineral density at lumbar spine (BMD-LS) and at femoral subregions (femoral neck: BMD-N, total hip: BMD-T, trochanter: BMD-Tr, intertrochanter: BMD-Int) by DXA (QDR 4500, Hologic).
All DXA parameters, when expressed in T-score, were significantly lower in GC patients with respect to control group. BMD-LS and BMD-N showed the greatest reduction. A significant, even if moderate, correlation was found between CD and BMD-N (r=-0.25 p<0.05), BMD-T (r=-0.34, p<0.001) and BMD-Int (r=-0.30, p<0.01). No significant relationship was found between CD and BMD-L. The study population was divided in tertiles. The DXA parameters at femur and at lumbar spine resulted significantly different on the basis of CD (one way ANOVA). Among sarcoidosis patients 20 (21%) had a history of fragility fractures; among the fracture patients 15 were women and of these latter 13 were postmenopausal. All DXA parameters were significantly (p<0.01) lower in patients with fracture compared with those without fracture. Our findings show that chronic treatment with corticosteroids is able to decrease densitometric parameters in sarcoidosis patients namely at skeletal sites where trabecular bone prevails. However cumulative dose of steroids is inversely related to BMD at all femoral subregions but not with BMD LS, therefore BMD at proximal femur seems to better reflect the damage of glucocorticoid therapy.