VOLUME 26 SUPPLEMENT 1 MARCH 2015

OSTEOPOROSIS INTERNATIONAL

with other metabolic bone diseases

EDITORS-IN-CHIEF JOHN A. KANIS AND ROBERT LINDSAY

NATIONAL OSTEOPOROSIS FOUNDATION
International Osteoporosis Foundation
Springer

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ANDROGEN STATUS, BONE MINERAL DENSITY AND MARKERS OF BONE METABOLISM IN MALE PATIENTS WITH PSORIATIC ARTHRITIS

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Study of key factors leading to the reduction of BMD in male patients with psoriatic arthritis (PA) will let to determine the differentiated approaches to management and care of male patients with chronic autoimmune inflammation focused on the prevention of secondary osteoporosis.

Objective: To study the relationship of testosterone levels, markers of bone turnover and BMD in patients with PA.

Materials and methods: 31 male patients with documented PA according to CASPAR criteria were enrolled in the study. Mean age of the patients was 48.8±11.83 years, mean BMI 27.6± 4.9 g/cm2, mean duration of the disease 10.0±10.04 years. Investigation of BMD (g/cm2) was performed in the lumbar spine (L_1-L_4) and proximal femurs by DXA (Lunar Prodigy Advance, USA). Levels of total testosterone (TS) and sex hormone binding globulin (SHBG), total vitamin D, osteocalcin and ß-crosslaps were determined by electrochemiluminescence assay (Cobas e411, Roche Diagnostic, reagents Roche Diagnostics GmbH, Germany). The level of free TS was calculated based on the levels of albumin, total TS, SHBG using the electronic calculator, available on the website www.issam.ch/freetesto.htm.

Results: Reduction in BMD corresponding to osteopenia / osteoporosis was observed in 59 % of patients, among them 10 (33 %) subjects had osteoporosis, and 8 (26 %) osteopenia. There was found statistical significant correlation between BMD at the lumbar spine and proximal femurs and disease

duration (r=0.459, p=0.018). Total testosterone in the examined patients matched reference values and amounted to 395.65 ±54.65 ng/dL. Free testosterone values obtained by calculation, consistent with 5.11±0.75 ng/dL. Correlation analysis revealed no statistically significant relationship between the levels of total and free testosterone and osteocalcin (r=0.180), ß-crosslaps (r=−0.016) and vitamin D (r=0.165), p>0.05.

Conclusion: Systemic osteoporosis/osteopenia, related to the duration of the disease, were observed in majority of men with PA, there were no revealed correlations between testosterone levels and BMD in this group of patients. This findings show that chronic autoimmune inflammation is a key factor in reducing BMD in male patients with PA.