Syndrome, were submitted to bone densitometry (DEXA) of lumbar spine and hip.

Methods Bone densitometry was performed using dual X-ray absorptiometry. T-score values (lumbar spine, femoral neck, Ward triangle and trochanter) were compared to treatment period and to the body mass index.

Results There were no difference between values of bone mineral density (BMD) in Pure Gonadal Dysgenesis and Turner Syndrome. But from all patients, compared to a normal control group, 90% showed a low BMD in lumbar spine (osteoporosis-45% and osteopenia- 45%). The mean value of BMD in L2-L4 was 0,92 g/cm².

Concerning to the femur BMD, 55% of the patients were affected (osteopenia in 50% and osteoporosis in 5%). The mean value of BMD was 0,83 g/cm².

The density of lumbar spine was positively associated to treatment period ($R = 0,57$) and, in the femur, to the body mass index ($R = 0,48$).

Conclusion In conclusion, Primary Hypoestrogenism in the pubertal period must be considered an important risk factor for osteopenia.

REFERENCES

- 1 Heaney RP, Recker RR, Saville PD. Menopausal changes in bone remodeling. *J Lab Clin Med.* 1978;**92**:953-63
- 2 Kleerekoper KS. Metabolic bone diseases sec IV primer on the metabolic diseases and disorders of mineral metabolism. 4th edn. Philadelphia: Lippincott Williams & Wilkins, 1999
- 3 Harper KD, Weber TJ. Secondary osteoporosis. *Diagnostic considerations. Endocrinol Metabol Clin N Am.* 1988;**27**(2):325-47

AB0173 PREVENTION AND TREATMENT OF CORTICOSTEROID-INDUCED OSTEOPOROSIS IN PATIENTS WITH CHRONIC RHEUMATIC DISEASES

K Loddenkemper, G Burmester, F Buttgerieit.

10.1136/annrheumdis-2001.612

Rheumatology and Clinical Immunology, Humboldt-University of Berlin, University Hospital Charité, Berlin, Germany

Background Long-term glucocorticoid therapy, a major risk factor for the development of osteoporosis, is often necessary in chronic-rheumatic patients. Generally accepted guidelines for either the prevention of- or the therapy of steroid-induced osteoporosis do not exist to date.

Objectives In an open prospective study, we examined 99 patients with chronic-rheumatic diseases, who were treated with 5 mg or more equivalent dose of prednisolone/day for at least one year. The study goal was to identify factors which influence the manifestation of osteoporosis besides glucocorticoid therapy. Additionally, the therapeutic efficacy of a) prevention with either calcium 500 mg/day and vitamin D 1000U/day or b) treatment with intermittent cyclical etidronate (400 mg/day for 14 days followed by 500 mg calcium/day for 76 days) was examined prospectively for one year.

Methods Clinical (e.g. rate of fractures, pain intensity), chemical (values of bone mineral metabolism) as well as radiographic parameters (bone mineral density/BMD (DEXA) were measured. Therefore, the patients were divided in two groups: patients with osteopenia (group 1) and patients with osteoporosis or osteopenia and an increased fracture risk (group 2). Patients in group 1 were given with the above-mentioned "prevention regimen", and those in group 2, the "treatment regimen".

Results 1. Increasing age was associated with more advanced manifestations of steroid-induced osteoporosis ($p < 0.05$). Male patients had a risk of steroid-induced osteoporosis, however, this was not statistically significant. Size, weight, daily and cumulative glucocorticoid dose and disease activity showed no significant influence on the degree of osteoporosis. 2. Despite the osteoporosis prevention regime, a significant rise of bone mineral metabolism parameters (pyridinoline, deoxypyridinoline, n-terminal telopeptid, ostease, bone specific alkaline phosphatase) was observed. The BMD was not influenced by therapy. 3. During the etidronate therapy, a significant rise ($p < 0.05$) in BMD was measured in the lumbar spine, whereas the femoral neck BMD and bone metabolism parameters remained constant. 4. The intensity of back pain was lowered significantly ($p < 0.05$) in both groups. 5. One year after therapy begin, there were less fractures in group 2 than in group 1.

Conclusion The early treatment with biphosphonates appears effective in long-term glucocorticoid therapy for early osteoporosis and should be recommended.

AB0174 URINARY EXCRETION OF TYPE 1 COLLAGEN CROSSLINKED N-TELOPEPTIDES IN RHEUMATOID ARTHRITIS: CORRELATION WITH BONE MINERAL DENSITY

M Miyata, J Yahata, I Takizawa, Y Koike. *Orthopaedic Surgery, Morioka Red Cross Hospital, Morioka Iwate, Japan*

10.1136/annrheumdis-2001.613

Background A immunoassay for measuring urinary excretion of Type 1 collagen crosslinked N-Telopeptides (NTX) has been reported to be specific method for assessing bone resorption.

Objectives The aim of this study was to find out the value of urinary NTX as a marker of bone atrophy in RA.

Methods The study population consisted of 80 female patients with RA according to ARA criteria (1987), 42-74 years of age. We measured bone mineral density (BMD) in the radius and lumbar spine by dual energy X-ray absorptiometry in patients with RA. Using enzyme-linked immunoassays, the concentrations of urinary NTX was estimated in urine samples from RA patients.

A correlation between urinary NTx and BMD of RA patients was analysed.

Results In RA patients there were significant correlations between urinary NTX and BMD.

Conclusion This findings suggest that urinary NTX is the useful marker of bone atrophy in RA.

AB0175 OBESITY IS A RISK FACTOR FOR OSTEOPOROSIS AND VERTEBRAL HYPEROSTOSIS

C Kiss, M Szilagyi, E Lanyi, A Paksy, L Halmi, GY Poor. *Rheumatology I, National Institute of Rheumatology and Physiotherapy, Budapest, Hungary*

10.1136/annrheumdis-2001.614

Background Connexion of obesity to osteoporosis (bone mineral density, BMD) and hyperostosis of the spine is not yet fully elucidated.

Objectives Their aim was to evaluate the connexion of osteoporosis (BMD of the spine and femur) and hyperostosis to obesity in a case-control study.