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.

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

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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

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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

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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.

Methods The cases were 101 obese (BMI over 30 kg/m²) and controls were 101 non-obese (BMI 18,5–24,9 kg/m²) subjects matched by age and sex over the age of 50 years. There was not significant difference between cases and controls regarding the other main risk factors for osteoporosis (time spent from menopause, diabetes, hyperthyroidism, alcohol and coffee intake, smoking, drugs causing osteoporosis). All probands in the case-control study were examined by radiographic investigation, vertebral morphometry, densitometry and by interviewer administered questionnaire. Radiographs were taken according to standardised protocol and hyperostosis was classified using Resnick criteria. Vertebral deformity was diagnosed with the McClosky-Kanis algorithm. Bone mineral density was measured by DEXA.

Results In the case-control study obesity was significantly associated with hyperostosis of the spine ($p \geq 0,05$) with higher mean values of bone mineral density of the femoral neck ($p \geq 0,000$), trochanter ($p \geq 0,000$), and lumbar spine ($p \geq 0,014$).

Conclusion According to their result obesity was associated with hyperostosis of the spine and with higher bone mineral density but not with fractures and osteoporosis in the past history.

AB0176 INFLUENCE OF NUTRITION ON BONE MINERAL DENSITY IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background A sufficient alimentation of vitamin D and calcium is essential in the prevention and treatment of osteoporosis. Patients with ankylosing spondylitis have osteoporosis to a various degree.

Objectives The aim of our study was to look at the influence of nutrition on bone mineral density in our patients with ankylosing spondylitis.

Methods We examined 180 patients with ankylosing spondylitis fulfilled the modified New York criteria. The bone mineral density was measured with DEXA (QDR 4500) at the lumbar spine (LS) and right hip.

Factors of nutrition were examined by a standardised questionnaire.

Results Positive correlations with bone mineral density were only found with wine consumption. However, this correlation was weak but was confirmed for both hip and LS bone mineral density measurements.

Abstract AB0176 Table 1

	N =	r =	p =
Milk	180	0,082	0,277
Sausage	180	0,051	0,051
Coffee	180	0,038	0,614
Cheese	180	-0,019	0,795
Wine	180	0,217	0,003

Correlation BMD-hip total with consumption of

Conclusion No significant correlations between milk and cheese intake with bone mineral density were found in patients with ankylosing spondylitis. Dietetic factors do not seem to influence much bone mineral density in patients with ankylosing spondylitis. Only wine consumption was found to have an influence on

bone mineral density as is correlated with bone mineral density in our patients with ankylosing spondylitis.

AB0177 SOME DETERMINANTS OF BONE MASS AND BONE GEOMETRY IN WOMEN OVER 50

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Background The exact influence of different risk factors of osteoporosis on bone need to be assessed.

Objectives The aim of this study was to assess the influence of some anthropometric and lifestyle factors on bone parameters of forearm in women over 50.

Methods This was a cross-sectional study included 117 women of 50–79 y.o. Volumetric BMD (trabecular, tBMD, and cortical, cBMD) cortical bone area (CBA) and strength sustained indices (SSI) of radius were measured using pQCT (Stratec-XCT960). The relationship among several factors influencing the bone parameters was assessed using a multiple regression analysis.

Results The age was the independent determinant of cBMD and CBA. BMI positively influenced tBMD. SSI depended on age and height. The years since menopause were not significant after controlling for other covariables. Dietary intake of calcium and smoking contributed a little to variation in bone parameters. Strong predictor of tBMD was professional physical activity in youth (negative correlation), and cBMD, CBA and SSI were influenced positively by current professional physical activity.

Conclusion Thus, different mechanisms might be involved in compact and trabecular bone loss and geometric parameters.

AB0178 ON THE DIAGNOSTICS OF POSSIBLY INHERITED OSTEOPOROSIS

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Background Osteoporosis (OP) is a disease of high occurrence in the older-aged population. Early diagnosis may trigger an efficient medication, which could slow down or even stop the decrease of bone mineral density (BMD), leading so to a noticeably decrease of the risk for bone fracture in old age. Reducing the incidence of osteoporosis is of utmost importance for both the individuals and the society, so it is not only of medical importance to identify individuals with a higher-than-average risk of developing osteoporosis.

Objectives The aim of this work is to investigate the role of inheritance in osteoporosis as mirrored by basic diagnostic methods. It is also of practical interest to establish the applicability of the by now routinely applied dual energy X-ray absorption (DEXA) method for early diagnostics of BMD for patient groups with a suspected tendency to inherited osteoporosis.

Methods The patient study group consisted of 28 mother-daughter pairs. The mothers (age group: 60–85 y) were suffering in a severe form of osteoporosis as shown for each of them by crush fractures of the vertebrae. The study of the BMD values was directed to the group of daughters of mothers suffering from osteoporosis (DMO). For the daughters (29–58 y, average