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OP098

PROPRIOCEPTIVE ASSESSMENT OF SHOULDER JOINT IN SUBJECTS WITH GENERALIZED JOINT HYPERMOBILITY

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Objectives: Proprioception is the ability to detect the position of body parts with respect to another (position sense) and the ability to detect the onset and the direction of the joint movement (movement sense). It has been suggested that there is alteration of proprioceptive acuity in hypermobility syndrome (HS). The aim of this study is to determine whether hypermobile subjects show any impairment of proprioception at the shoulder joint.

Methods: Forty-one healthy volunteer college students with a mean age of $19,46 \pm 0,75$ were included in the study. Two patients having conditions that may alter proprioception were excluded. Twenty-two of 39 subjects were found to be hypermobile according to the Beighton scoring system. The subjects' physical activity as sports and dance participation was also questioned. Proprioceptive assessment was done with Cybex Norm dynamometer. Reproduction of active (RAP) and passive repositioning (RPP) at neutral and 30° external rotation into both internal and external rotation directions were tested.

Results: The mean ages of subjects with and without hypermobility were 19.45 and 19.47, respectively. Hypermobile subjects showed significant differences in RAP at neutral to ER direction ($p=0,04$) and RAP at 30° ER to IR direction ($p=0,03$). In most of the measurements they had poorer proprioceptive acuity but it did not reach statistically significance. There wasn't any significant differences between two groups according to the age and physical activity.

Conclusions: The impairment of proprioceptive sensation in HS has previously been reported at the knee joint but there is no study about shoulder joint proprioception in these subjects. Subjects with generalized joint hypermobility may have proprioceptive deficits at the shoulder joint, detected as reproduction of active repositioning even though they do not have any clinical symptoms.

OP099

CORTICAL BONE QUALITY IN POSTMENOPAUSAL OSTEOPOROSIS: OVERTOMIZED RAT MODEL

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Objectives: A cortical bone quality is also important in osteoporosis and only a few studies described non invasive assessment of the quality of cortical bone in osteoporosis. Bone quality is compromised with bone microarchitecture, bone mineralization and bone mechanical properties. The aim of this study was to investigate the effect of ovariectomy on rat femur cortical bone quality. Bone mineral density; bone biomechanical parameters, histopathology and Fourier transform infrared spectroscopy (FTIR) were used for the evaluation of bone quality

Methods: 14 female Sprague- Dawley rats (7 ovariectomized, 7 control) were evaluated. BMD was measured by dual energy X-ray absorptiometry (Norland 45XR) before ovariectomy and after the 100 day of ovariectomy. Biomechanical parameters was measured in femoral midshaft with tensile test using by biomaterial testing machine (MAY 03, USA) using BIOPAC MP 100 Acquisition System Version 3.5.7 (Santa Barbara, USA). Maximum load, stiffness and elastic modulus (Young modulus) were

calculated. Histopathological evaluation and FTIR measurement (Mattson Satellite series FTIR system model 3000, USA) were also performed.

Results: BMD, cortical bone biomechanical parameters and cortical thickness were significantly decreased in osteoporotic groups than controls. In FTIR analysis showed that carbonate level was higher and phosphatase level was lower level in osteoporotic rats.

Conclusions: Cortical bone mineral densitometry, biomechanics and mineral properties were changed in osteoporosis and cortical bone quality is important for osteoporosis.

OP100

PREDICTORS OF OSTEOPOROSIS IN MEN

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Objective: Osteoporosis is increasingly recognised in males and the aim of this study is to evaluate the predictors of bone mineral density (BMD) in men.

Methods: The study subjects were 193 Turkish men who admitted to the Social Security Education and Training Hospital because of several other health problems with a mean age of 52,69 year (range 35-65) and a mean body mass index of $26,53 \text{ gr/cm}^2$ (range 18.34 - 36.33). Bone mineral density of the lumbar spine L2-L4 and different sites of femoral head were assessed by DEXA. They were evaluated by a questionnaire and the following items were recorded: demographic information, smoking habits, alcohol consumption, daily calcium intake (cheese, yogurt and milk), physical activity, medical history, previous and current medication. 25 (OH) vitamin D, osteocalcin, PTH, testosterone, estradiol, growth hormone, cholesterol were evaluated. Lateral thoracolumbar and anteroposterior pelvis X-rays were taken and were evaluated by the same radiologist as normal, osteoporotic and uncertain.

Results: The majority were (117 patient) educated from primary school. %78.2 of were smoking and %33.7 of the smoking patients' lumbar vertebra BMD were osteoporotic. Only 25 patients were drinking a glass of milk regularly and %56.99 of were eating cheese daily. The results of the evaluation of X-rays were; %49.7 osteoporotic, %38,3 normal, %11,9 uncertain. Mean value of 25(OH) vitamin D was 34.2 ng/ml (range: 5,4-133,2 ng/ml) which was low, but in normal ranges. The serum cholesterol concentration range were 100 and 309 mg/dl mean value 186 mg/dl. 115 patients never used alcohol and 20 patients were taking alcohol daily. Logistic regression analysis showed cheese, testosterone, cholesterol, X-ray and interestingly; alcohol intake were the positive predictors of bone mineral density. Smoking was a negative predictor. Also interestingly we couldn't find vitamin D, osteocalcin PTH, estradiol, growth hormone and physical activity as a predictor. **Conclusion:** This cross-sectional study showed the relation among BMD and estimated risk factors; calcium consumption, alcohol intake, smoking, testosterone level, cholesterol and X-ray in men.