SAT0173 DOES OSTEOARTHRITIS DECREASE THE RISK OF OSTEOPOROSIS ? A PROSPECTIVE CLINICAL STUDY

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Background Osteoporosis (OP) and Osteoarthritis (OA) are the most prevalent musculoskeletal diseases of the population. The inverse relationship between the OP and OA is being investigated in the last four decades. After the invention of the non-invasive techniques for the measurement of bone mineral density, this relationship was studied more detailed.

Objectives This study was planned to investigate the relationship between OA and OP, to find out the OP rate in the subgroups of the OA and to help for the diagnosis, treatment and prevention of the OP.

Methods Forty-six female patients, who had an OA diagnosis according to the ACR criteria were admitted to the study. Twelve of them had knee OA, 12 had lumbar OA, 12 had hand OA and 10 had both lumbar and knee OA. In the control group there were 26 healthy women in similar ages. Patients who had the diseases that cause to the secondary OP like RA, gout, DM, thyroid and parathyroid function disorders and who used the drugs that is known to effect the bone metabolism like corticosteroids, antiepileptics and thiazid diuretics, were excluded from the study. Bone mineral density measurement was made from L2-L4 vertebra and femur neck with DEXA anteroposterior projection. The DEXA results of the OA subgroups were compared with the healthy controls and the relationship between them was evaluated.

Results Although bone mineral density scores of knee and lumbar OA group were both higher than control group, only lumbar vertebra group was statistically significant. There wasn't a significant difference between the hand and control group bone mineral density results. The results suggest that the lumbar and knee OA have a positive effect on the bone mineral density and the femur is effected less than the lumbar vertebra which is seemed to be the target area of this relationship. No correlation was found in the hand OA group.

Abstract SAT0173 Table 1

n	Lumbar-t (DEXA)	Lumbar-z (DEXA)	Femur-t (DEXA)	Femur-z (DEXA)
Knee OA (12)	-1.15 ± 1.35*	0.04 ± 1.40*	-1.31 ± 1.22	-0.05 ± 1.36
Knee+Lumb. SPA (10)	0.089 ± 2.26*	1.08 ± 2.25*	-0.84 ± 1.45	0.33 ± 1.64
Lumbar SPA (12)	-0.72 ± 1.52*	-0.05 ± 1.41*	-0.71 ± 1.42	0.09 ± 1.06
Hand OA (12)	-2.29 ± 1.09	-1.10 ± 1.19	-1.72 ± 0.80	-0.65 ± 0.96
Control Group (26)	-2.48 ± 1.26	-0.98 ± 1.03	-1.55 ± 1.07	-0.32 ± 0.84

*p < 0.05.

Conclusion We think that the increased bone mineral density at the knee and lumbar OA group can be a negative indicator for the prevention and treatment of OP but in our opinion the hand osteoarthritis group is not a good negative indicator.

SAT0174 BONE HEALTH IN YOUNG WOMEN: A POPULATION STUDY

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Background Peak bone mass is determined by the genetic potential as modified by nutrition, exercise, hormonal status and disease. Osteoporosis may be prevented by identifying and modifying risk factors in younger age groups. This paper reports on the distribution of bone density (BMD) and prevalence of risk factors in 225, of a target 300.

Objectives The aims of this study were to identify the frequency of osteoporosis and identify the key associates of low bone density in young women in 2 regions of England.

Methods Women (excluding pregnant) aged 20–29 were selected at random from 9 GP practices (6 in Cornwall [C] and 3 in Surrey [S]) in a 2 stage random sampling process, and invited by letter to participate. Demographic, lifestyle and anthropometric data were collected by questionnaire, 7-day food diary and examination. BMD was measured at the lumbar spine (LS) and femoral neck (FN) using dual-energy X-ray absorptiometry (DXA).

Results The main demographic and anthropometric data are given in Table 1. No differences were found between the 2 groups. However, a lower BMD was found in C at the FN ($t = 2.13$, $p = 0.03$). Although the meaning of t-score is uncertain in women of this age, osteopenia (t-score <-1.0 and >-2.5) was found in 21% women at LS and 11% at FN. Osteoporosis (t-score <-2.5) was found in 2(1%) cases at the LS only, both in C. Various risk factors were identified in the total group. Amenorrhoea >6 months duration in 29(13%), BMI <19 in 13(6%), history of smoking in 134(59%). 74(33%) women had a history of fracture however none fulfilled the standard criteria for low trauma fracture. 18(8%) women reported a history of possible or definite eating disorder. In analysing the association between risk factors and BMD weight had the predominant effect at FN ($r^2 = 0.181$ $B = 0.425$ $p < 0.001$) and LS ($r^2 = 0.112$ $B = 0.334$ $p < 0.001$). Risk factors significantly associated with BMD were history of smoking ($t = -2.31$ $p = 0.02$) and amenorrhoea ($t = -2.09$ $p = 0.04$). Associations between self-reported milk intake and BMD were analysed using the GL Model. Those with a current consumption of 1 pint/day or more had BMD.094 (SD.043 $p = 0.03$) greater than those who drank milk less than once/week. Both adolescent and current low consumption of milk was associated with a lower BMD for weight than expected.

Abstract SAT0174 Table 1

	Cornwall (n = 162) mean (SD)	Surrey (N = 63) mean (SD)	Total (n = 225) mean (SD)
Age	26.00 (2.88)	26.00 (2.37)	26.00 (2.75)
Height (m)	1.65 (0.07)	1.65 (0.07)	1.65 (0.07)
Weight (kg)	66.39 (13.79)	65.21 (11.33)	66.06 (13.13)
BMI	24.47 (4.86)	23.97 (4.48)	24.33 (4.75)

Conclusion The prevalence of osteoporosis was low in young UK women but 25% were osteopenic. BMD measurement may be of limited use at this age for predicting future osteoporotic