differentiation. The inhibitory effect of menatetrenone on osteoclast formation is not due to gamma-carboxylation and the side chain of menatetrenone may play an important role in this inhibitory effect.

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SAT0162 CORRELATION BETWEEN BONE MASS INDEX AND BONE MASS DENSITY MEASURED AT A NON-WEIGHT-BEARING SITE: STUDY ON 712 POSTMENOPAUSAL WOMEN

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Background Body weight is highly related to bone mineral density (BMD), regardless of age, menopausal duration, or any other variables. Low body mass index (BMI) constitutes a risk for fragility fractures. Thin postmenopausal women are more at risk of developing non-traumatic fractures.

Fatness is positively associated with BMD, both at weight-bearing and non-weight-bearing sites. Therefore, it is presumable that the both mechanical load, induced by greater body weight, and hormonal factors, through the effects of adipose tissue on levels of circulating estrogens, are responsible for greater skeletal density in obese people.

Objectives The aim of the present study was to demonstrate the correlation between BMI and BMD evaluated at the distal radius. That site has been chosen because it is a non-weight-bearing area and consequently it is not influenced by the mechanical load.

Methods A total of 712 Caucasian menopausal women, aged 41–100 years (mean age 65, mean duration of menopause 17,4 yrs.) was studied. The sample was divided into 4 groups according to BMI (modified WHO classification): underweight (BMI 18.5–24.9, 315 patients, mean age 64,5 yrs., mean duration of menopause 17,2 yrs.), overweight (BMI >25–29.9, 270 patients, mean age 66.1 yrs., mean duration of menopause 18,6 yrs.), obese (BMI >30; 133 patients, mean age 63.8 yrs., mean duration of menopause 15.3 yrs.).

BMD was studied using dual-energy X-ray absorptiometry (HOLOGIC DTX 100). The examinations were performed on the distal radius of the non-dominant forearm. Diagnosis of osteoporosis was made according to the WHO report (T score <-2.5 SD: osteoporosis. T score ≥1 to -2.5 SD: osteopenia. T score 0 to ≥1 SD: normal). The ANOVA procedure and the Chi square test were used for statistical analysis of the results.

Results Results are reported on Table 1.

Abstract SAT0162 Table 1

	Mean BMD* g/cm ²	Osteoporosis**	Osteopenia**	Normal**
Obese	0.415	18.0%	48.9%	33.1%
Overweight	0.389	29.6%	48.9%	21.5%
Normal	0.378	32.1%	49.2%	18.7%

*p < 0.0000 (ANOVA); **p < 0.004 (Chi square).

Conclusion As expected, the mean value of BMD was higher in the obese group (p < 0.000001). The analysis of prevalence of osteoporosis and osteopenia in all the groups studied showed a negative correlation between body size and bone mass loss. In particular it was observed the finding of a progressive reduction of the number of osteoporotic women with the increasing BMI, while the percentage of osteopenic subjects was almost constant (p < 0.004).

The importance of the present study was the demonstration of a strong positive correlation between BMI and BMD at non-weight-bearing site. The findings confirms the protective role of adipose tissue on the bone independently of the influence of the mechanical load.

SAT0163 RISK FACTORS RELATED TO LOW HEEL BONE MINERAL DENSITY IN POSTMENOPAUSAL WOMEN

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Background

Objectives To analyse the relationship between risk factors of osteoporosis (OP) and heel bone mineral density (BMD) in postmenopausal women in a Mediterranean area.

Methods 170 postmenopausal women were consecutively selected for an osteoporosis screening. In all women we collected the following data: age, BMI (body mass index), years since menopause, pregnancy, breast-feeding, maternal hip fracture; use of coffee, alcohol and tobacco; daily calcium intake, sun exposure and previous fractures (distal forearm, vertebral, hip and other non-traumatic fractures). A measurement of heel BMD was done in all women with PIXI bone densitometer (Lunar). Dorso-lumbar x-rays were reviewed in all patients. Chi-square, Student or Fisher tests were used for the statistical analysis.

Results Significant differences between patients with normal values of BMD and OP were detected only for the following risk factors:

Conclusion Previous fractures, mother's hip fracture, low BMI, age and years since menopause are factors associated with low heel BMD. So, PIXI is a good method for OP screening in postmenopausal women.

SAT0164 TWO YEAR RESULTS OF ONCE-WEEKLY ADMINISTRATION OF ALENDRONATE 70 MG FOR THE TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS

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Background The therapeutic equivalence of alendronate (ALN) 70 mg once weekly (OW) (provided by Merck and Co., Inc., Whitehouse Station, NJ, USA), ALN 35 mg twice weekly (TW), and ALN 10 mg once daily (OD) in the treatment of postmenopausal osteoporosis for 1 year has been reported previously.¹ We

will present preliminary two-year BMD results from a one-year extension.

Objectives

Methods We compared the efficacy of treatment with OW ALN 70 mg (n = 519), TW ALN 35 mg (n = 369), and OD ALN 10 mg (n = 370) over 2 years in a double-blind, multicenter study of postmenopausal women (age 40 to 90) with osteoporosis (BMD of either the lumbar spine or femoral neck ≥ 2.5 SDs below peak mean, or prior vertebral or hip fracture). The primary efficacy endpoint was change in lumbar spine BMD. Secondary endpoints included changes in BMD at the hip and total body.

Results Mean BMD increases at the lumbar spine, total hip, femoral neck, hip trochanter, and total body sites for each treatment regimen after two years were very similar, with no clinically meaningful differences.

Conclusion These findings confirm that once-weekly ALN 70 mg is therapeutically equivalent to once-daily ALN 10 mg in patients with postmenopausal osteoporosis. In addition, the two-year results demonstrate that once-weekly ALN 70 mg is generally as safe and well tolerated as ALN 10 mg once daily.

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SAT0165 THE EFFECT OF ALENDRONATE ON AGE-SPECIFIC INCIDENCE OF KEY OSTEOPOROTIC FRACTURES

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Background

Objectives To describe the behaviour of the relative risk (RR), absolute risk reduction (ARR), and number needed to treat (NNT) by attained age for the hip, spine or forearm for alendronate treatment in women with osteoporosis.

Methods 3658 women with osteoporosis from the Fracture Intervention Trial were followed for 3 to 4.5 years and treated with alendronate (ALN) at 5 mg/day for 2 years followed by 10 mg/day for the remainder of the trial. The age groups used in the analysis were: 55–65, 65–70, 70–75 and 75–85. All fractures were confirmed by x-rays.

Results Risk reduction of hip, spine and forearm fractures were 53% (RR = 0.47, p < 0.01), 45% (RR = 0.55, p < 0.01) and 30% (RR = 0.70, p = 0.038) respectively. The reductions did not depend on age. The ARR increased with age for each of the fracture sites. For the hip, the ARR increased from 0.13 women per 100 patient-years at risk (PYR) for the 55 to 65 group to 0.53 women per 100 PYR for the 75 to 85 group. The corresponding increases in ARR for the spine were 0.14 and 0.86. The NNTs for 5 years for the hip were 157 for the 55–65 year old and 45 for the 75 to 85 year old women. The corresponding numbers for the spine were 140 and 23. For the composite endpoint, the NNTs (for 5 years) were 38, 25, 17 and 13 for the age groups 55–65, 65–70, 70–75 and 75–85 respectively.

Conclusion Alendronate is very effective in reducing the risk of osteoporotic fractures, regardless of age.

SAT0166 ALENDRONATE REDUCES THE RISK OF CLINICAL VERTEBRAL FRACTURE IN OSTEOPENIC WOMEN: DATA FROM FIT

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Background

Objectives To determine the effectiveness of alendronate in reducing the risk of clinical vertebral fractures (CVFX) in women with osteopenia who do not meet the BMD criterion for osteoporosis.

Methods We studied 3737 women, age 55 to 80, from the Fracture Intervention Trial who had BMD T-score > -2.5 at the femoral neck: 940 with an existing morphometric vertebral fracture (MVFX) and 2797 without. 1859 were treated with PBO and 1878 were treated with ALN 5 mg per day for the first two years and 10 mg for the remaining period for up to 2.5 years. All CVFX were confirmed by a physician.

Results The absolute risk of CVFX was about 4 to 5 fold greater in women with existing MVFX than in those without. Alendronate significantly (p = 0.005) reduced the overall risk of CVFX by 60% (RR = 0.40 (0.19, 0.76)). The reductions were consistent among those with and without MVFX: 0.34 (0.12, 0.84) and 0.46 (0.16, 1.17) respectively. The effect was observed very early. There were no CVFX in the first year among the alendronate patients.

Conclusion Alendronate was equally effective in reducing the relative risk of painful clinical vertebral fractures in women with and without existing MVFX. The effect of alendronate was seen early.

SAT0167 SAFETY OF ONCE-WEEKLY ALENDRONATE 70 MG IN PERIODONTAL DISEASE

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Background Periodontal disease, the leading cause of tooth loss in adults, is a chronic inflammatory process which leads to a local imbalance between bone formation and bone resorption. Alendronate sodium (ALN) is a potent and selective inhibitor of osteoclastic bone resorption used for the treatment and prevention of osteoporosis in postmenopausal women. In postmenopausal osteoporotic women, ALN 70 mg once weekly has demonstrated efficacy comparable to those of ALN 10 mg daily and very good safety and tolerability. However, there has been no direct comparison between ALN 70 mg once weekly and placebo.

Objectives

Methods To further investigate the safety profile of once weekly ALN, as well as efficacy in periodontal disease, we are conducting a randomised, placebo-controlled, multicenter, 2-year study. Three-hundred and thirty-five patients aged 30 to 79 with