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.

REFERENCE

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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

periodontal disease were randomised to either placebo (PBO) or ALN 70 mg once weekly.

Results The overall and upper gastrointestinal (GI) safety and tolerability profile of ALN after one year of treatment was very favourable compared to placebo.

Table 1:

Abstract SAT0167 Table 1

Adverse Events (%) patients)	ALN (N = 167)	PBO (N = 168)	Upper GI Adverse Events (% patients)	ALN (N = 167)	PBO (N = 168)
Any	81.4	84.5	Any upper GI	10.8	11.9
Drug-related [1]	9.0	11.9	Drug-related [1]	4.2	6.5
Discontinued	2.4	3.0	Abdominal pain	4.8	4.8
Serious [2]	5.4	4.8	Dyspepsia	2.4	4.8

[1] Drug-related indicates that the investigator considered the event possibly related to study drug while still blinded to treatment allocation.

[2] Serious adverse events include those requiring hospitalisation or causing death.

Conclusion In summary, 1-year data show that ALN 70 mg once weekly was very well tolerated in men and women with moderate to severe periodontal disease.

SAT0168 RISEDRONATE IS ASSOCIATED WITH A LOWER INCIDENCE OF GASTRIC ULCERS THAN ALENDRONATE: RESULTS FROM TWO COMPARATIVE STUDIES

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Background Bisphosphonates (BPs) are effective treatments for osteoporosis, but some have been associated with GI injury.

Objectives We compared the incidence of gastric ulcers after treatment with risedronate (RIS), a pyridinyl BP, and alendronate (ALN), a primary amino BP, in 2 similar endoscopic studies.

Methods In both studies, healthy postmenopausal women were randomised to receive RIS 5 mg or ALN 10 mg daily for 14 days. Subjects received ALN as original round tablets in Study 1 and as wax-polished oval tablets in Study 2. In Study 2, subjects were stratified by *Helicobacter pylori* (HP) status before randomization. Evaluator-blind assessment of the esophageal, gastric, and duodenal mucosa was performed at baseline and on Days 8 and 15 of each study.

Results In both studies, the overall incidence of gastric ulcers >3 mm was significantly lower in the RIS group than in the ALN (Table 1). Mean gastric erosion scores were significantly lower in the RIS group than in the ALN group at Day 8 and 15 ($p < 0.001$) in both studies. Mean esophageal and duodenal endoscopy scores were similar in the 2 groups at Days 8 and 15. Esophageal ulcers were noted in none of the evaluable subjects in the RIS group and in 3 in the ALN group in Study 1, and in 1 evaluable subject in the RIS group and 2 in the ALN group in Study 2. Duodenal ulcers were noted in 2 evaluable subjects in the RIS group and 1 in the ALN group in Study 1 and in none of the evaluable subjects in Study 2. In Study 2, HP infection did not increase the incidence of BP-related GI injury.

Abstract SAT0168 Table 1

	RIS 5 mg N	RIS 5 mg n (%)	ALN 10 mg N	ALN 10 mg n (%)	P-value
Study 1	221	9 (4.1)	227	30 (13.2)	<0.001
Study 2	300	18 (6.0)	297	36 (12.1)	0.013

Conclusion In 2 large, comparative studies in which RIS and ALN were given at doses for the treatment of osteoporosis, the incidence of gastric ulcers was significantly lower among RIS-treated subjects than among ALN-treated subjects. Results were consistent in the 2 studies despite the difference in the shape and polish of the ALN tablets used. These findings support the hypothesis that BPs differ in their potential to produce upper GI mucosal damage.

SAT0169 INFLUENCE OF VITAMIN D RECEPTOR (VDR) GENOTYPE IN THE BONE LOSS INDUCED BY CORTICOSTEROID THERAPY

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Background Corticosteroid therapy (CST) is a risk factor for developing decreased bone mineral density (BMD). Previous studies suggest that VDR genotype is involved on loosing BMD. **Objectives** To investigate the influence of VDR genotype in changes of BMD induced by CST.

Methods In 53 patients (age 41.7 ± 12.6) without osteoporosis, who received a dose greater than 5 mg daily of prednisone or equivalent for 3 months (mean dose 1.9 g). VDR genotypes were determined by PCR to demonstrate the presence (b) or absence (B) of a restriction target for Bsm I, in intron 7. Bone mineral density (BMD) by DEXA at spine, femoral neck (FN) and Ward's triangle (WT) were measured baseline and 3 months after CST and expressed as a Z-score.

Results The BMD was reduced 3 months after CST (cumulative steroid dosage, mass index, and age was adjusting) without significant difference in both VDR groups: bb, and bB-BB; (Z-score before/3 months after) at Spine: 0.40/0.17 bb; 0.32/0.10 bB-BB; FN: 0.87/0.75 bb; 0.40/0.15 bB-BB; WT: 0.84/0.86 bb; 0.22/0.14 bB-BB. However, when the patients were adjusting to receive more or lesser than 1.3 g cumulative dose, those patients had bb genotype and greater dose had significant lower BMD at WT ($p < 0.05$), respective bB-BB genotypes.

Conclusion Data suggest that the VDR genotype identifies the patients with greater risk to bone loss when high corticosteroids dose is used.

SAT0170 RISEDRONATE REDUCES THE RISK OF NEW VERTEBRAL FRACTURES IN 1 YEAR IN POSTMENOPAUSAL WOMEN ON CORTICOSTEROID THERAPY

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