OP0114 BENEFICIAL EFFECTS OF RISEDRONATE TREATMENT ON BMD AND VERTEBRAL FRACTURE RISK IN MEN ON GC THERAPY

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Background Of the 518 patients enrolled in studies of patients initiating or on maintenance of glucocorticoid (GC) therapy (Prevention: less than 3 months on GC therapy and Treatment: greater than 6 months GC therapy), 186 were men. There were 77 men in the Prevention study and 109 in the Treatment study. The mean ages and lumbar spine T-scores were 59.5, -0.38 for the Prevention study and 56.2 and -1.67 for the Treatment study respectively.

Objectives

Methods Patients were randomised to receive placebo, or risedronate (RIS) 2.5 mg, or RIS 5 mg daily for 1 year in both studies. Patients were supplemented with elemental calcium 500 mg/day or elemental calcium 1 g/day and vitamin D 400 IU/day. Most men in the studies were taking GC therapy for either rheumatoid arthritis (38%) or lung disease (22%).

Results RIS 5 mg significantly increased BMD or prevented bone loss at both the spine and the hip in men (Table 1 Year BMD Mean (SE)% Change from Baseline in Men Taking Glucocorticoids). 23% (9 out of 38) of placebo patients had a new vertebral fracture compared with 5% in the risedronate 2.5 and 5 mg/day treated group (3 out of 58). The vertebral fracture risk reduction was 82% ($p = 0.008$) for pooled risedronate doses.

Abstract OP0114 Table 1

	Treatment Group Control [n]	Treatment group RIS 2.5 mg [n]	Treatment Group RIS 5 mg [n]
Lumbar Spine (Prevention Study)	-3.4 (0.8)* [19]	0.3 (1.3) [9]	0.8 (0.6)^ [24]
Femoral Neck (Prevention Study)	-3.3 (1.1)* [20]	-0.7 (1.7) [9]	1.5 (1.0)^ [24]
Trochanter (Prevention Study)	-3.4 (0.9)* [20]	-0.3 (1.1) [9]	1.5 (0.8)^ [24]
Lumbar Spine (Treatment Study)	1.2 (0.8) [22]	2.1 (0.8)* [25]	4.8 (0.9)*^ [25]
Femoral Neck (Treatment Study)	-0.2 (1.0) [24]	-0.7 (0.8) [25]	2.1 (0.7)* [25]
Trochanter (Treatment Study)	0.5 (1.4) [24]	0.4 (0.8) [25]	2.6 (0.5)* [25]

*p less than or equal to 0.05 vs. baseline; ^p less than or equal to 0.05 vs. control.

Conclusion In summary, these studies demonstrate that risedronate is effective in preventing bone loss in men recently on glucocorticoids and can increase BMD in men on long term glucocorticoid therapy.

OP0116 VERTEBRAL DEFORMITIES ARE ASSOCIATED WITH QUANTITATIVE ULTRASOUND VARIABLES IN RHEUMATOID ARTHRITIS A STUDY OF 198 FEMALE PATIENTS

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Background

Objectives Earlier studies have suggested that bone quality might be reduced in RA patients, and lead to a lower fracture threshold regarding DEXA measurements. Quantitative ultrasound (QUS) may give additional information about bone quality not captured by DEXA. The aim of this study was to examine the relationship between vertebral deformities (VD), and bone mass measured by DEXA and QUS in female RA patients.

Methods Lateral radiographs of the spine were obtained from 198 female RA patients born 1926 or later (mean age (SD) 63.3 (6.7) yrs, mean disease duration 16.7 (10.3) yrs), recruited from a population based county RA register. Vertebral deformities were measured by an experienced radiologist (AH), using a standardised semiquantitative method described by Genant, and classified as mild, moderate or severe (a reduction in any of the vertebral heights of 20–25%, 25–40% and more than 40%, respectively). QUS was measured for both heels (Lunar Achilles +), providing speed of sound (SOS), broadband ultrasound attenuation (BUA) and Stiffness Index (SI), a parameter computed from the two above. The patients underwent BMD measurements by DEXA (Lunar Expert) at the femoral neck, total hip and lumbar spine (L2-L4).

Results The total number of deformities was 127 (63 moderate or severe). Thirty-nine patients (19.7%) had at least two mild or one moderate/severe fracture. Mean values (SD) for SOS was 1484.2 m/s (35.6), BUA 98.27 dB/MHz (15.07) and SI 61.14% (19.14), mean values of T- and Z-score were -2.43 (1.20) and -0.97 (1.12) respectively. Mean BMD (SD) for femoral neck was 0.807 gm/cm² (0.140), total hip 0.840 gm/cm² (0.150) and L2-L4 1.050 gm/cm² (0.199), corresponding T- and Z-scores were -1.44 (1.17)/-0.24 (0.14), -1.33 (1.25)/-0.36(1.09) and -1.25 (1.66)/0.20 (1.55). Correlations between SI and DEXA at the femoral neck, total hip and L2-L4 were 0.56, 0.63 and 0.44 respectively.

Table 1 shows the results of the bivariate analysis of the different QUS measurement values.

In logistic regression analysis, applying a model using various demographic and disease variables, a Z-score less than -1SD for Stiffness showed an independent association with vertebral deformities.

Abstract OP0116 Table 1

	VD negative	VD positive	p-value
BUA (dB/MHz)	100.5	89.03	<0.001
SOS (m/s)	1489.4	1463.8	<0.001
SI (%)	64.09	49.10	<0.001
T-score < -2.5 QUS*	43.4%	76.9%	<0.001
T-score < -2.5 DEXA**	11.8%	27.8%	0.03

*Computed from Stiffness Index ** At the total hip, results for femoral neck and L2-L4 were non-significant.