Fig.2: The rate of increased TH-BMD from baseline to 6 month

Disclosure of Interests: None declared

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SAT0455 RADIOFREQUENCY ECHOGRAPHIC MULTI SPECTROMETRY (REMS) FOR THE IDENTIFICATION OF FRAIL BONES

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Background: Radiofrequency Echographic Multi Spectrometry (REMS) is the first clinically available approach for direct non-ionizing measurement of bone mineral density (BMD) at lumbar spine (LS) and femoral neck (FN). Available scientific evidences describe BMD estimated by REMS as an accurate parameter for the diagnosis of osteoporosis [1].

Objectives: To investigate the effectiveness of the T-score values provided by REMS scans at FN and LS in the identification of frail patients at risk for osteoporotic fractures and to compare the performance of REMS with the dual-energy X-ray absorptiometry (DXA) one.

Methods: The patients underwent DXA and REMS scans at FN and at LS. Five clusters of fractures occurred during a median 3.5-year follow-up were identified whether involving the upper limb (forearm, elbow, humerus, wrist, hand), lower limb (tibia, ankle, metatarsus), thorax (shoulder blade, shoulder, rib), hip (femur or pelvis bones), or vertebrae. The ability of REMS and DXA T-score values to assess the incidence and site of fractures was evaluated through an analysis of covariance.

Results: Seven hundred twenty-one Caucasian women were enrolled. Ninety-five fractures occurred, in particular 41 at upper limb, 16 at hip, 15 at thorax, 14 at lower limb, 9 at vertebrae. Patients characteristics are reported in table. Considering subcategories of fractured patients, there were not statistically significant differences for age, height, weight and BMI.

In the analysis of covariance including age and BMI as covariates, the difference of T-score values between fractured and non-fractured patients is statistically significant for REMS and DXA at both sites.

Lower FN T-score values were found for patients with fractures at hip or vertebra with respect to non-fractured patients both for REMS and DXA ($p < 0.001$). Considering LS T-score, lower values were found for patients with fractures at hip, vertebra or upper limb with respect to non-fractured patients both for REMS and DXA ($p < 0.001$, Figure).

Conclusion: REMS T-score measured at axial sites is an effective parameter for identification of patients at the risk of incident fragility fractures, in particular occurring at hip, vertebra or upper limb in a population-based sample of female subjects.

References:

[1] Diez-Perez, Aging Clin Exp Res 2019;31(10):1375–89

Table 1. Baseline patient characteristics, expressed as median (25th – 75th percentiles).

	Patients with incident fragility fracture	Patients without incident fragility fracture	p-value*
Age [years]	70 (60-73)	59 (54-64)	<0.001
Height [cm]	159 (155-164)	160 (156-165)	0.08
Weight [kg]	63 (58-70)	62 (57-69)	0.42
BMI [kg/m ²]	24.97 (23.13-26.86)	24.24 (22.22-26.59)	0.04
FN REMS T-score	-2.3 (-2.8 – -1.7)	-1.8 (-2.3 – -1.1)	<0.001
FN DXA T-score	-2.2 (-2.8 – -1.6)	-1.7 (-2.3 – -1.1)	<0.001
LS REMS T-score	-3.0 (-3.5 – -2.0)	-2.0 (-2.8 – -1.0)	<0.001
LS DXA T-score	-2.8 (-3.4 – -1.8)	-1.9 (-2.7 – -1.0)	<0.001

* Wilcoxon ranksum test

Figure. Boxplot of the distribution of T-score values estimated REMS and DXA at FN and LS among patients without incident fragility fracture and patients with incident fragility fractures at different sites.

Note: G. Adami, G. Arioli[§], G. Bianchi[§], M.L. Brandi[§], C. Caffarelli[§], L. Cianferotti[§], G. Girasole[§], S. Gonnelli[§], M. Manfredini[§], M. Muratore[§], E. Quarta[§], L. Quarta[§], D. Gatti[§] equal contributors listed in alphabetical order.

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SAT0456 REAL-LIFE RISK OF FRACTURE AND TREATMENT PREVALENCE IN DRUG-INDUCED OSTEOPOROSIS IN ITALY USING A NEW ALGORITHM

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Background: Glucocorticoid-induced osteoporosis and osteoporosis induced by adjuvant hormone therapy for breast cancer are the most common forms of secondary osteoporosis.

Objectives: The exact real-life prevalence of treatment with anti-osteoporotic drugs in women with drug-induced osteoporosis is not known. In the present study, using a new mathematical and computerized algorithm, we investigate the profile of risk of fracture of women with drug-induced osteoporosis and the prevalence of treatment with anti-osteoporotic drugs.