

for trend in women, respectively), and between the minor allele and overweight (>25 in BMI, OR 1.52, 95%CI 1.07-2.14,  $p=0.02$  in men, OR 1.48, 95%CI 1.16-1.95,  $p=0.01$  in women).

Logistic regression analysis showed a significant protective association in men with carriers of minor allele against low bone mass after an adjustment for age and BMI (OR 0.63, 95%CI 0.44-0.90,  $p=0.01$  in men, not significant in women).

**Conclusion:** Our study indicated significant associations of the polymorphism on *FTO* with BMI and bone mass among community dwelling men. The polymorphism may play a role in a part of bone health with higher BMI and other beneficial functions.

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SAT0459

### EVALUATION OF THE PREVALENCE AND THE MANAGEMENT OF OSTEOPOROTIC FRACTURES IN PATIENTS HOSPITALIZED AT NANCY UNIVERSITY HOSPITAL (FRANCE) IN 2017.

A. Baccichetti<sup>1</sup>, P. L. Nguyen-Thi<sup>2</sup>, A. Blum<sup>3</sup>, D. Mainard<sup>4</sup>, F. Sirveaux<sup>4</sup>, L. Nace<sup>5</sup>, A. Valance<sup>6</sup>, T. Civit<sup>7</sup>, G. Dautel<sup>8</sup>, C. Perret-Guillaume<sup>9</sup>, B. Guerci<sup>10</sup>, H. Tronel<sup>11</sup>, I. Chary Valckenaere<sup>1</sup>, D. Loeuille<sup>1</sup>. <sup>1</sup>CHU Nancy, Rheumatology, Nancy, France; <sup>2</sup>CHU Nancy, Medical Evaluation, Nancy, France; <sup>3</sup>CHU Nancy, Radiology Guillouz, Nancy, France; <sup>4</sup>CHU Nancy, Orthopedic Surgery, Nancy, France; <sup>5</sup>CHU Nancy, Emergencies Unit, Nancy, France; <sup>6</sup>CHU Nancy, Post Emergencies Unit, Nancy, France; <sup>7</sup>CHU Nancy, Neurosurgery, Nancy, France; <sup>8</sup>CHU Nancy, Hand Surgery, Nancy, France; <sup>9</sup>CHU Nancy, Geriatrics, Nancy, France; <sup>10</sup>CHU Nancy, Endocrinology, Nancy, France; <sup>11</sup>CHU Nancy, Medical Information, Nancy, France

**Background:** Osteoporotic fractures are a major public health concern because of their consequences in morbidity, costs and mortality. In the meantime, historically postfracture osteoporosis medication use rates have been poor.

**Objectives:** The aim is to analyze the management of osteoporosis in patients hospitalized for osteoporotic fractures (OF) at Nancy University Hospital (France) in 2017.

**Methods:** Total number of hospitalized patients and hospital stays were extracted by the Department of Medical Information (DIM) which selected departments with at least forty hospitalizations with Medical Unit Summary related to a diagnosis of fracture or osteoporosis. Hospitalizations not concerned by a recent OF were excluded. Data on fractures, patient characteristics, risk factors for OF and fall, management of osteoporosis, discharge status, stay duration, were studied from patient medical records. Prevalence of OF stays, management of osteoporosis and factors associated with duration of stay were analyzed.

**Results:** Out of a total of 153,840 hospitalizations, 918 hospitalizations (844 patients, mean age 74.5 years  $\pm$  13.6, 74.5% women) concern an OF. The prevalence of hospitalizations for OF was 0.6% of total hospitalizations and 17.9% of total hospitalizations for fractures. Among the 844 patients, 85.7% had a severe fracture (vertebral fracture: 56.2%, hip fracture: 24.1%), 16.5% had a non-severe fracture, and 8.5% had a fracture cascade in the year. At discharge from hospital, 11.7% of patients received a specific treatment for osteoporosis. Longer stay duration was associated with age, severe fractures, Groll index and discharge status.

**Conclusion:** Nearly one hospitalized fracture in five is osteoporotic, while only one in ten patients is treated for osteoporosis. Stay duration increased with age and comorbidities. This encourages the development of early prevention, screening and treatment strategies for osteoporosis.

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SAT0460

### INGESTION OF LEMON JUICE MAY MODULATE BONE METABOLISM.

F. Bellone<sup>1</sup>, N. Morabito<sup>1</sup>, G. Pirisi<sup>1</sup>, S. Loddo<sup>1</sup>, R. Corsaro<sup>1</sup>, F. Corica<sup>1</sup>, A. Catalano<sup>1</sup>. <sup>1</sup>University of Messina, Department of Clinical and Experimental Medicine, Messina, Italy

**Background:** An association between bone health and consumption of citrus fruits have been previously reported; however, the effect of lemon juice on bone metabolism have not been explored yet.

**Objectives:** To investigate bone metabolic changes in postmenopausal women assuming lemon juice.

**Methods:** Participants were postmenopausal osteoporotic women without history of clinical fractures who agreed to enrich their diet with lemon juice (Acti Lemon, Polenghi) over a 2-month period. The daily juice dose of 30ml we suggested was equivalent to one Sicilian organic lemon. Surrogate markers of bone formation as procollagen type 1 N-propeptide (P1NP) and of bone resorption as C-terminal telopeptide of type I collagen (CTX), but also some regulators of bone metabolism as RANK-L, OPG, RANK-L/OPG ratio and sclerostin were assessed at baseline and then at 1 and 2 months after lemon juice administration. Controls were represented by a placebo group of age-matched osteoporotic postmenopausal women.

**Results:** 47 participants [mean age 60.2  $\pm$  4.1 yr.] completed the study, without reporting any adverse events. Lemon juice was well tolerated. Over the observation period modifications of bone metabolism occurred: we detected a decreased RANK-L/OPG ratio and increased CTX levels at all time points vs. baseline. Particularly, change at month-1 of sclerostin (versus baseline) has been positively associated with change at month-1 and month-2 of CTX ( $r=0.46$ ,  $p=0.01$  and  $r=0.43$ ,  $p=0.01$ , respectively). Change at month-1 of OPG was positively associated with change at month-1 of P1NP ( $r=0.49$ ,  $p=0.006$ ). Change at month-1 of RANKL/OPG has been related with variation at day 30 of P1NP ( $r=-0.44$ ,  $p=0.013$ ). Variation of P1NP at month-1 was related with sclerostin variation at day 30 ( $r=-0.56$ ,  $p=0.02$ ) and month-2 vs. baseline value ( $r=0.44$ ,  $p=0.017$ ) and with sclerostin variation between month-1 and month-2 ( $r=0.69$ ,  $p<0.001$ ). Variation of P1NP between month-1 and month-2 was associated with RANKL change at month-1 ( $r=-0.35$ ,  $p=0.05$ ), with sclerostin change at month-1 ( $r=-0.49$ ,  $p=0.008$ ) and with sclerostin change between month-1 and month-2 ( $r=0.41$ ,  $p=0.028$ ). At a multiple regression analysis the change of P1NP between month-1 and month-2 was independently predicted by the change of sclerostin at month-1 ( $\beta=-1.5$ , SE 0.5,  $p=0.006$ ), after correcting for age, BMI and change of RANKL and CTX levels at month-1. No significant modifications raised from controls.

**Conclusion:** Drinking lemon juice may boost bone metabolic changes involving both bone resorption and bone formation.

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SAT0461

### SHORT-TERM MONITORING OF DENOSUMAB EFFECT IN BREAST CANCER PATIENTS RECEIVING AROMATASE INHIBITORS USING REMS TECHNOLOGY ON LUMBAR SPINE

E. Quarta<sup>1</sup>, D. Ciardo<sup>2</sup>, M. Ciccarese<sup>3</sup>, F. Conversano<sup>2</sup>, M. Di Paola<sup>2</sup>, R. Forcignanò<sup>3</sup>, A. Grimaldi<sup>1</sup>, F. A. Lombardi<sup>2</sup>, M. Muratore<sup>1</sup>, P. Pisani<sup>2</sup>, S. Casciaro<sup>2</sup>. <sup>1</sup>Galateo Hospital, ASL-LE, O.U. of Rheumatology, San Cesario di Lecce, Italy; <sup>2</sup>National Research Council, Institute of Clinical Physiology, Lecce, Italy; <sup>3</sup>Vito Fazzi Hospital, ASL-LE, O.U. of Oncology, Lecce, Italy

**Background:** Aromatase inhibitor (AI) therapy in women with estrogen receptor-positive (ER+) breast cancer (BC) causes accelerated bone loss and increased risk of osteoporosis and fractures as side effects. Denosumab (i.e. 60 mg twice a year) is a viable therapy against bone resorption, but the short-term monitoring of bone mineral density (BMD) change with time is still an unmet clinical need, since the current techniques (including dual-energy X-ray absorptiometry, DXA) require 1-2 years between two consecutive measurements [1]. Radiofrequency Echographic Multi Spectrometry (REMS), with high performance in terms of precision and repeatability [2], might be used in this setting of patients for short-term monitoring of bone health-related parameters.

**Objectives:** The objective is the short-term monitoring of the effect of AIs with/without denosumab on bone health in BC patients using REMS and DXA scans at lumbar spine.

**Methods:** Post-menopausal ER+ BC patients treated with adjuvant AIs were recruited. Two subgroups were identified, whether receiving also 60 mg of denosumab therapy every 6 months or not (named Group A and Group B, respectively). All patients underwent baseline DXA and REMS lumbar spine scans at