score was found significantly lower in SLE patients compared with CNT (0.868±0.227 vs 1.482±0.313, p<0.001, respectively). An history of high-dose oral glucocorticoids (>10 mg/day) was associated with the preservation of BMD at the lumbar spine but not in spinal trabecular bone as observed by TBS analysis.

**Conclusion:** SLE is associated with significant trabecular bone loss, which could not be caused by glucocorticoid therapy. This study confirms the role of TBS as new and safe diagnostic tool for the quantification of the bone quality in chronic and systemic inflammatory rheumatic diseases, such as SLE.

**REFERENCES:**


Disclose of Interests: None declared


### FR00502

**CORRELATION OF THE DAILY DIETARY INTAKE OF CALCIUM WITH THE LEVEL OF BONE MINERAL DENSITY IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS INFECTION**

Walter Alberto Silvanceta-Girakela, María Llop Vilatellab, Cristina Macía-Villac, Pilar Vizcarrada, Marta Monsalvoyb, Mónica Vázquez Díazd, José Luis Casado1, Hospital Ramón Y Cajal, Rheumatology, Madrid, Spain; 2Hospital Ramón Y Cajal, Infectious Diseases, Madrid, Spain

**Background:** There are few studies in which the relationship between daily calcium intake and bone mineral density (BMD) in patients with human immunodeficiency virus (HIV) infection has been evaluated, as well as its correlation with other factors of risk for the development of fragility fractures in this population.

**Objectives:** To determine the correlation of daily calcium intake with the most predictive risk factors for fragility fracture in patients with HIV infection, as well as BMD values in a cohort of patients followed in a Tertiary Hospital.

**Methods:** Cross-sectional evaluation of a prospective study carried out in a specialized unit in HIV/AIDS of a tertiary Madrid hospital. We included asymptomatic consecutive patients with HIV infection, older than 50 years, followed regularly between January 2014 and December 2016.

**Results:** A total of 128 patients were included (35 women, 27%), with a mean age of 57 years (range: 50-83) and body mass index of 23.8 kg/m2 (range: 15.6-33.5). The mean time of HIV infection was 256 months (range: 202-306) and of antiretroviral therapy (ART) 219.7 months (range: 156-247). The average calcium intake obtained by dietary calculation was 563.8 g/day (462-2772). Among the risk factors for fragility fracture (included in the FRAX): 44 (34%) reported smoking, 11 (9%) family history of fracture, 54 (42%) previous history of fracture, 8 (6%) significant alcohol consumption and 25 (21%) renal tubular dysfunction. According to the WHO classification based on BMD at the level of lumbar spine (LS) 50 (39%) were classified as osteopenia and 43 (34%) as osteoporosis, while at the femoral neck level said proportions were 83 (65%) and 9 (7%), respectively. A correlation was found between higher calcium intake with a longer time of ART (rho = 0.2, p = 0.02), but not with the age or time of HIV infection. The calcium intake showed no correlation with serum calcium levels (rho = 0.05, p = 0.72), serum phosphorus levels or bone biomarkers such as alkaline phosphatase, osteocalcin or P1NP, but an inverse relationship with the levels of procollagen (rho = -0.21; p = 0.02). Calcium intake was associated with greater exercise, assessed by the International Physical Activity Questionnaire (IPAQ) (rho 0.23; p = 0.01). The calcium intake was lower in patients with osteoporosis with respect to osteopenia or normal (hip 500 vs 580 vs 573, LS 507 vs 635 vs 585, respectively, p = 0.04 between osteoporosis/osteopenia). Although a lower calcium intake was found in patients with vertebral fractures, this was not significant (486 (236) vs 583 (317), p = 0.09).

**Conclusion:** Although recent meta-analyses show that calcium intake in non-HIV population is not related to the development of fragility fractures, in our cohort (with the limitations of a cross-sectional study) a probable association of daily calcium intake with a low BMD is evidenced. These findings should be confirmed in the longitudinal analysis of the data of the cohort.

**REFERENCES:**


Disclose of Interests: None declared


### FR00503

**USING BONE MINERAL DENSITY VERSUS THE RATIO OF BODY MASS INDEX TO BONE MINERAL DENSITY TO PREDICT FRACTURE RISK IN HYPERTHYROIDISM**

Khoja Talaat, Marwan Bukhari, Royal Lancashire Infirmary, Lancaster, United Kingdom

**Background:** Euthyroidism is important in the development of a normal skeletal system, with thyroid hormones acting as important regulators of bone homeostasis in adults. Hyperthyroidism, whether current or previous, increases the risk of developing osteoporotic fractures by stimulating osteoclastic bone resorption and hence bone remodelling, which overall results in decreased bone mineral density. Generally, BMD is used as a predictor of fracture risk; however there has been recent research that suggests using the ratio of BMD to Body Mass Index (BMI) is a better marker of predicting fracture risk in obese patients than BMD alone.

**Objectives:** Our research set out to find whether BMI alone or the ratio of BMI to BMD is a better predictor of fracture risk in patients with current or previous hyperthyroidism.

**Methods:** Data were used from a cohort of patients with current or previous hyperthyroidism, referred for DEXA scan to a District General Hospital between June 2004 and October 2010. The following were recorded: age, sex, whether a fracture was sustained, whether they had steroid therapy at any point, BMI, BMD at L1-L4, BMD at femoral neck (left and right) and BMD at hip (left and right). Logistic regression models were fitted using fracture as the dependent variable. The independent variables for the first set of logistic regression models were BMI at each level and for the second set BMI:BMD ratio at the same levels. Data were adjusted for sex and age at scan. The fit of logistic models were compared using area under the ROC curves (AUC).

**Results:** 720 patients were used in the study, of whom 643 (89.3%) were female. Mean age was 63.6 years (SD 11.6) with age range of 28.4 to 89.6 years. 120 (16.7%) were recorded to have had steroid therapy at any point, BMI, BMD at L1-L4, BMD at femoral neck (left and right) and BMD at hip at left (left and right). Logistic regression models were fitted using fracture as the dependent variable. The independent variables for the first set of logistic regression models were BMI at each level and for the second set BMI:BMD ratio at the same levels. Data were adjusted for sex and age at scan. The fit of logistic models were compared using area under the ROC curves (AUC).

**Conclusions:** This study identifies that the BMI:BMD ratio does not provide better indication of fracture risk than BMD alone in our cohort of patients with current or previous hyperthyroidism. We have previously shown that the same is true for patients with rheumatoid arthritis. A limitation of this study is not stratifying by presence of other diseases or steroid use.

**Table 1. – Odds ratios (age- and sex-adjusted) and AUC values**

<table>
<thead>
<tr>
<th>Level</th>
<th>Odds Ratio and CI (BMI)</th>
<th>AUC (BMI)</th>
<th>Odds Ratio and CI (BMI:BMD)</th>
<th>AUC (BMI:BMD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>0.128 (0.0510, 0.324)</td>
<td>0.6277</td>
<td>1.07 (1.04, 1.09)</td>
<td>0.6305</td>
</tr>
<tr>
<td>L2</td>
<td>0.611 (0.0697, 0.374)</td>
<td>0.6277</td>
<td>1.06 (1.03, 1.09)</td>
<td>0.6250</td>
</tr>
<tr>
<td>L3</td>
<td>0.128 (0.0510, 0.324)</td>
<td>0.6418</td>
<td>1.06 (1.04, 1.09)</td>
<td>0.6307</td>
</tr>
<tr>
<td>L4</td>
<td>0.188 (0.0787, 0.401)</td>
<td>0.6282</td>
<td>1.06 (1.03, 1.09)</td>
<td>0.6249</td>
</tr>
<tr>
<td>L1 to L4</td>
<td>0.120 (0.0496, 0.291)</td>
<td>0.6282</td>
<td>1.07 (1.04, 1.10)</td>
<td>0.6309</td>
</tr>
<tr>
<td>L FEMORAL</td>
<td>0.0998</td>
<td>0.6219</td>
<td>1.05 (1.02, 1.07)</td>
<td>0.6285</td>
</tr>
<tr>
<td>NECK</td>
<td>0.0450</td>
<td>0.6776</td>
<td>1.06 (1.03, 1.09)</td>
<td>0.6798</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.0980 (0.0223, 0.412)</td>
<td>0.6812</td>
<td>1.07 (1.03, 1.10)</td>
<td>0.6936</td>
</tr>
</tbody>
</table>

**Conclusion:** This study identifies that the BMI:BMD ratio does not provide better indication of fracture risk than BMD alone in our cohort of patients with current or previous hyperthyroidism. We have previously shown that the same is true for patients with rheumatoid arthritis. A limitation of this study is not stratifying by presence of other diseases or steroid use.