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**THU0470**

**NON-CLONAL ELEVATION OF SERUM IMMUNOGLOBULIN FREE LIGHT CHAINS IS PREDICTIVE OF HIP FRACTURE IN BOTH WOMEN AND MEN**


**MAYO CLINIC, Rochester, USA**

**Background:** Proinflammatory cytokines favour uncoupling of bone turnover and decreased bone density and strength, leading to increased fracture risk. Non-clonal elevation of serum immunoglobulin free light chains (sum of kappa and lambda chains) (\(\text{\(s\)}\)) may be a global marker of generalised immune stimulation, and has been associated with chronic co-morbidities as well as increased mortality.

**Objectives:** We examined whether elevated \(\text{\(s\)}\) is associated with an increased risk for hip fractures in a population-based cohort.

**Methods:** We studied Olmsted County, Minnesota, USA residents, age \(\geq\) 50 years, in whom \(\text{\(s\)}\) was measured between March 1995 and November 2003 and research authorisation was available. Anyone with a known plasma cell disorder was excluded. Using the Rochester Epidemiology Project, a unique medical records linkage system that allows access to all (inpatient and outpatient) community medical records for Olmsted County residents, we identified all hip fractures that occurred in subjects following their \(\text{\(s\)}\) measurement to their last available follow-up or the end of 2015. All available medical records were reviewed by trained nurse abstractors to validate hip fractures identified and to determine their antecedent cause (pathological process [e.g., malignancy], severe trauma [e.g., motor vehicle accidents]) and those due to no more than moderate trauma [by convention, equivalent to a fall from standing height or less]).

**Charlson comorbidity index (CCI)** was defined at the time of baseline \(\text{\(s\)}\) measurement. We used a Cox proportional hazards model, stratified by sex, adjusting for age, serum creatinine and CCI, to examine whether \(\text{\(s\)}\) was \(\geq\) 4.72 mg/dl (levels previously associated with increased mortality in this population) was associated with an increased risk for hip fracture.

**Results:** We studied 15,814 residents [mean age (SD), 64.10 yr; 8722 women, 7092 men] of whom 796 (9.1%) women and 781 (11.0%) men had \(\text{\(s\)}\) \(\geq\) 4.72 mg/dl. Women and men with an elevated \(\text{\(s\)}\) \(\geq\) 4.72 mg/dl had higher CCI [median (IQR) 2 (0,4) vs 0 (0,2); same results for both sexes]. We identified 677 women and 255 men with a hip fracture from any cause (628 women and 220 men had a moderate trauma hip fracture), over 12,171 person-years (p-y) and 89,269 p-y of follow-up, respectively. We found that both women and men with \(\text{\(s\)}\) \(\geq\) 4.72 mg/dl had an increased risk for hip fracture due to any cause: hazard ratio (HR) [95% CI] 1.31 [1.00, 1.73] in women, 1.97 [1.37, 2.53] in men; as well as for moderate trauma hip fractures: HR 1.39 [1.05, 1.84] in women, HR 2.12 [1.46, 3.09] in men.

**Conclusions:** We found that \(\text{\(s\)}\) \(\geq\) 4.72 mg/dl is associated with an increased risk for hip fractures in both women and men, independent of age and chronic comorbidities. Elevated \(\text{\(s\)}\) may be a marker of proinflammatory cytokines detrimental to bone health and warrants further study.

**REFERENCES:**


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**Disclosure of Interest:** None declared

**THU0472**

**FACTORS ASSOCIATED WITH READINESS FOR ADOPTING OSTEOPOROSIS TREATMENT CHANGE**


1University of Alabama at Birmingham, Birmingham; 2University of Massachusetts; 3Department of Internal Medicine, Medical University – Sofia; 4Department of Internal Medicine, Medical University – Sofia, Medical Institute; 5Department of Internal Medicine, Medical Institute – Ministry of Interior, Sofia, Bulgaria

**Background:** Understanding factors associated with the readiness for adopting osteoporosis treatment change may inform the design of behavioural interventions to improve osteoporosis treatment uptake in women at high risk for fracture.

**Objectives:** To examine the factors associated with the readiness for adopting osteoporosis treatment change among US women with prior fractures.

**Methods:** US women in the Global Longitudinal Study of Osteoporosis (GLOW) with self-reported fractures who were not currently using osteoporosis therapy were eligible to participate in the Activating Patients at Risk for OsteoPoroSiS (APROPOS) Study. Participants’ readiness for behaviour change was assessed using a modified form of the Weinstein Precaution Adoption Process Model (PAPM). We defined pre-contemplative participants as those who self-classified in the unawares and unengaged stages of PAPM. Contemplative participants were defined by the undecided, decided not to act, and decided to act stages of PAPM. Bivariate tests and stepwise multivariable logistic regression evaluated the following factors associated with these two levels of readiness for behaviour change: sociodemographic characteristics, health literacy, self-reported history of depression and dementia, previous treatment for osteoporosis, whether participants had been told they had osteoporosis/osteopenia, and whether they had concerns about osteoporosis.

**Results:** A total of 2684 women were enrolled in APROPOS. Participants were 95% Caucasian, with a mean (SD) age 74.9 (8.0) years and 77% had some college education. Overall, 25% (n=544) self-classified in the contemplative stage of behaviour change. Compared to women who self-classified as pre-contemplative, contemplative women were more likely to be concerned about osteoporosis (adjusted OR [aOR]=3.2, 95% CI 2.3–4.4) and to report prior osteoporosis treatment (aOR 4.3, 95% CI 3.1–6.0). Participants who were told they had osteoporosis had a 12.4 fold odds to be in the contemplative group (95% CI 8.5–18.1), while those who were told they had osteoporosis had a 4.1 fold odds to be in the contemplative group (95% CI 2.9–5.9).