

## P560

**HEALTH TECHNOLOGY ASSESSMENT OF DIFFERENT GLUCOSAMINE FORMULATIONS AND PREPARATIONS CURRENTLY MARKETED IN THAILAND: IMPACT OF THEIR CLINICAL EFFECT AND SELLING PRICE**O. Bruyere<sup>1</sup>, J. Detilleux<sup>1</sup>, J.-Y. Reginster<sup>1</sup><sup>1</sup>ULiège, Liege, Belgium

**Objective:** To assess to cost-effectiveness of different glucosamine formulations and preparations used for the management of osteoarthritis in Thailand.

**Methods:** We use a validated model to simulate the individual patient Utility score from aggregated data available in 10 different clinical trials. We then used the Utility score to calculate the quality-adjusted life year (QALY) over a 6-month treatment horizon. We used the 2019 public costs of glucosamine products available in Thailand to calculate the incremental cost/effectiveness ratio. We separated the analyses for prescription-grade crystalline glucosamine sulfate (pCGS) and other formulations of glucosamine. A cost-effectiveness cutoff of 3.260 \$/QALY was considered.

**Results:** Regardless of the glucosamine preparation (tablet or powder/capsule), the data show that pCGS is cost-effective compared to placebo over a 3 and 6-month time horizon. However, the other glucosamine formulations (e.g., glucosamine hydrochloride) never reach the breakeven point at any time.

**Conclusion:** Our data show that pCGS is cost-effective in the management of osteoarthritis in the Thai context while other glucosamine formulations are not.

## P561

**NESFATIN-1 IS ASSOCIATED WITH OSTEOPOROSIS IN PATIENTS WITH RHEUMATOID ARTHRITIS**E. V. Papichev<sup>1</sup>, Y. R. Akhverdyan<sup>1</sup>, Y. V. Polyakova<sup>1</sup>, L. E. Sivordova<sup>1</sup>, B. V. Zavadovsky<sup>1</sup><sup>1</sup>Research Institute of Clinical and Experimental Rheumatology named after A.B. Zborovsky, Volgograd, Russia

**Objective:** Nesfatin-1 is a multifunctional protein, associated with an insulin-sensitivity and demonstrating an anorexigenic effect [1]. Nesfatin-1 is positively associated with an inflammation level in patients with rheumatoid arthritis [2]. However, there is lack of evidence, whether nesfatin-1 level may be associated with a bone metabolism. Our aim was to study the association between serum nesfatin-1 level and prevalence of osteoporosis in patients with rheumatoid arthritis.

**Methods:** 110 patients with rheumatoid arthritis were enrolled in our study. Nesfatin-1 serum levels were assessed by ELISA using a commercial test system. The diagnosis of osteoporosis was set according to the recommendations of WHO. We determined serum levels of 25-hydroxycalciferol (25(OH)D), C-terminal telopeptide of type I collagen (CTX-1) and procollagen type I N-propeptide (PINP). Nonparametric characteristics are presented as Me [Q1-Q3]. The Mann-Whitney test (Z) was performed to determine the differences between groups. Spearman's  $\rho$  was used to describe correlation.

**Results:** Median level of nesfatin-1 was 44.5 [25.9-67.2]. Median nesfatin-1 serum levels were higher among patients with osteoporosis (45.2 [27.3-74.5] ng/ml vs. 40.1 [21.4-53.4] ng/ml; Z = -2.06;

$p = 0.040$ ). No correlation was observed between serum levels of nesfatin-1 with 25(OH)D and CTX-1 ( $\rho = -0.10$ ;  $p = 0.304$  and  $p = 0.09$ ;  $p = 0.351$  respectively). Weak positive correlation was observed between nesfatin-1 and PINP serum levels ( $\rho = 0.25$ ;  $p = 0.009$ ).

**Conclusion:** Serum nesfatin-1 levels were higher in patients with osteoporosis. Weak positive correlation was observed between serum nesfatin-1 and PINP levels. Due to our study, nesfatin-1 is positively associated with the level of bone metabolism and osteoporosis development. More studies are needed to clarify the mechanisms of observed associations.

**References:**

1. Su Y, et al. *Biochem Biophys Res Comm* 2009;391:1039
2. Kvlivdize T, et al. *Ann Rheum Dis* 2021;80(S1):1437

## P562

**OSTEOPOROSIS MEDICATION ADHERENCE TOOLS: A SYSTEMATIC REVIEW**E. Hesari<sup>1</sup>, M. J. Mansourzadeh<sup>2</sup>, M. Sanjari<sup>2</sup>, N. Fahimfar<sup>2</sup>, K. Khalagi<sup>2</sup>, A. Ghazbani<sup>3</sup>, A. Ostovar<sup>2</sup>, A. Fotouhi<sup>1</sup>

<sup>1</sup>School of Public Health, Dept. of Epidemiology & Biostatistics, Tehran University of Medical Science, Tehran, <sup>2</sup>Osteoporosis Research Center, Endocrinology and Metabolism Clinical Sciences Institute, Tehran University of Medical Sciences, Tehran, <sup>3</sup>Student Research Committee, Bushehr University of Medical Sciences, Bushehr, Iran

**Objective:** Poor adherence reduces the effectiveness of osteoporosis treatment, resulting in lower BMD gains and subsequently higher fractures rates. Reliable and practical tools are needed to measure medication adherence. The aim of this systematic review was to find osteoporosis medication adherence measurement tools and assess their applicability.

**Methods:** We searched for osteoporosis adherence measurement tools and all their related keywords in PubMed, Embase, Web of science and Scopus databases on 12 April, 2021. After excluding duplicates in the Endnote software, two researchers independently investigated the remained articles and included all articles that used a method for measuring medication adherence of osteoporosis. Adherence meant both terms compliance and persistence. Quality assessment was performed for selected articles by Newcastle-Ottawa Quality Assessment Scale.

**Result:** A total of 3821 articles were found, of which 180 articles met the inclusion and exclusion criteria. In general, 5 types of methods were observed to measure medication adherence of osteoporosis including direct methods ( $n = 4$ ), pharmacy records ( $n = 17$ ), questionnaires ( $n = 13$ ), electronic methods ( $n = 1$ ) and tablet counting ( $n = 1$ ) (Figure). Direct methods included measurement of bone turnover markers such as uNTX, sCTX and the BMD. The most commonly used adherence measurement based on pharmacy records was medication possession ratio (MPR). Among questionnaires, Morisky Medication Adherence Scale was mostly used.