pneumatic external compressioin device but statistical differences in SF depth were not observed at 3 and 6 months.

Conclusion: Despite improvements in WOMAC, VAS scores, and PCS scores on the SF 36 at 3 and 6 months after US guided knee injections with an HA product, a statistically significant reduction in the amount of US measured SF was not observed. The 6 MWD improved at 3 months but was not statistically different from the baseline distance by 6 months. IA injections using US needle visualization confirmed that the product was delivered into the synovial space with 100 % accuracy which might have resulted in improved efficacy results in this study compared to prior IA HA studies injected without US or using different HA products. In the future, we hope SF biomarkers may identify which individual OA patients will likely achieve the greatest benefit with IA HA injections and to determine if this is associated with a reduction in catabolic pro-inflammatory proteins.

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POS1123 WEAK OPIOIDS AND TREATMENTS WITH ANTICHOLINERGIC PROPERTIES INCREASE BUT ANTIHYPERTENSIVE TREATMENTS DECREASE THE NUMBER OF FALLS IN PATIENTS FOLLOWED FOR KNEE AND/OR HIP OA: ANALYSES OF THE KHOALA COHORT

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Background: The risk of falling is increased in people with knee osteoarthritis (OA) but the risk factors may not be the same as in the general population. The level of evidence for the associations between the different risk factors and falls in OA is moderate, the number of studies for each factor being small.

Objectives: The main objective of the study was to identify factors associated with the number of falls in patients with symptomatic knee and/or hip OA during five years of follow-up, in particular the drug-related risk factors that are modifiable factors.

Methods: This study was based on data from the KHOALA (Knee and Hip OsteoArthritis long term Assessment) cohort, consisting of 878 patients aged 40 to 75 years, with symptomatic knee and/or hip OA, recruited between 2007 and 2009 in the general population. Patients were followed up annually for 10 years. This study is a longitudinal analysis using data from years 5 to 10, with falls data collected from year 5.

The primary endpoint was the number of falls reported by the patient. The potential risk factors studied were: medications grouped into ATC classes, a score of treatments with anticholinergic properties*, demographic (age, sex, education, socio-professional category), clinical (comorbidities), perceived health (WOMAC-pain, WOMAC-function, quality of life by the SF-36), and radiological (Kellgren stage) data. Statistical analyses used generalized linear mixed models.

Results: 661 patients were included in the analyses. The majority of the sample was female (69%); the mean age was 62 years at year 5, and 153 patients (23.15%) had reported one or more falls in the previous 12 months.

In multivariate analyses, and thus independent of pain and functional abilities, a significantly higher number of falls was found in women (OR [CI95%] 1.70 [1.12-2.57]), patients living alone (0.65, [0.47-0.95], P=0.02), retired people (1.92, [1.094-3.37]), patients with more comorbidities (OR 1.10, [.01-1.21]), using fewer antihypertensive drugs (OR 0.61, [.42-0.90]), more weak opioids (OR 1.44, [.05-1.96]) and more treatments with anticholinergic properties (OR 1.31, [.00-1.73])

Conclusion: Weak opioids and the score of treatments with anticholinergic properties increased, but antihypertensive treatments decreased the number of falls in patients followed for knee and/or hip OA. The risk factors found in this study are identical to those of the general population, whose pain and functional capacities are less impaired.

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POS1124 EVALUATION OF COMORBIDITY PATTERNS AND IDENTIFICATION OF SUB-GROUPS IN PATIENTS DIAGNOSED WITH HIP OSTEOARTHRITIS IN 94,720 PATIENTS FROM SPAIN

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Background: Osteoarthritis (OA) patients are more likely to have other comorbidities (Swain, Sarmanova et al. 2020). Improving the understanding of comorbidity profiles of OA patients may lead to improvement in their clinical care.

Objectives: To identify sub-groups in patients diagnosed with hip OA using patterns of comorbidity.

Methods: Routinely-collected data of individuals ≥18 years with an incident diagnosis of hip OA (baseline/time of diagnosis), with at least 1 year of follow-up in SIDIAP (Information System for Research in Primary Care, a primary case database from Spain) were collected from January 1st 2006 to June 31st 2020. Those with soft-tissue disorders or other bone/cartilage diseases at the same joint in the year prior/after baseline were excluded. Comorbidities associated with OA in the literature and

present in ≥1% of the study population were included. Clusters of comorbidities were identified at baseline using latent class analysis (LCA), a soft clustering method that classifies individuals according to the distribution of their measured items. The number of clusters or sub-groups within the study population was decided by comparing goodness of fit parameters (CAIC, BIC, ABIC) and log-likelihood changes of models from 2 to 8 clusters. The selected model was externally evaluated by a survival analysis assessing 10 years mortality within each cluster, where the weight of the posterior probability was used as a probability of sampling weight.

Results: We identified 94,720 individuals with an incident diagnosis of hip OA, 56.3% women and 43.7% men, with a mean age (SD) of 67.2 (13.1) years. We selected the LCA model with 5 clusters that could be described as: healthier (lower prevalence of all comorbidities than average in the cohort), multimorbidity (higher prevalence of all comorbidities, multiple comorbidities), back/neck pain plus mental health (B/N-mental), cardiovascular disease (CVD), and metabolic syndrome (MetS) (Figure 1). Cox regression (HR [95CI%]) showed higher mortality risk for multimorbidity (3.76 [3.70-3.83]), CVD (1.56 [1.53-1.59]) and MetS (4.56 [4.35-4.78]), compared to healthy. No difference was observed for B/N-mental cluster.

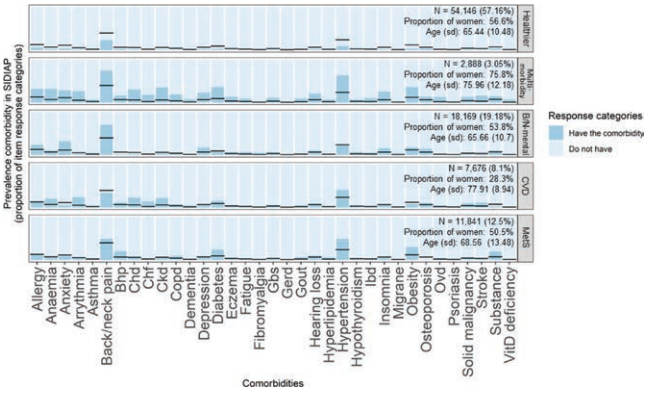

Figure 1. Distribution of comorbidities within each cluster using latent class analysis. Clusters were described as Healthier, Multimorbidity, B/N-mental, CVD and MetS. Black horizontal lines represent the prevalence of the comorbidity before the clusterization. Abbreviations: Healthier, lower prevalence of all comorbidities; Multimorbidity, higher prevalence of all comorbidities; B/N-mental, back/neck pain plus mental health disorders; CVD, cardiovascular disease; Met, metabolic syndrome; Bhp, benign prostate hypertrophy; Chd, chronic heart disease; Chf, chronic heart failure; Ckd, chronic kidney disease; Copd, chronic obstructive pulmonary disease; Gbs, gall bladder stone; Gerd, gastroesophageal reflux disease; Ibd, inflammatory bowel disease; Ovd, other vessel diseases; Substance, substance abuse.

Conclusion: Clustering of co-morbidities in hip OA patients at the time of diagnosis has the potential to detect sub-groups of hip OA patients who might require additional care.

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POS1125

EFFICACY OF TUMOR NECROSIS FACTOR INHIBITORS IN HAND OSTEOARTHRITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Background: Hand osteoarthritis (OA) is a leading cause of functional impairment associated with chronic pain and stiffness in hand joints[(1)]. It is well documented that inflammation plays an important role in the pathogenesis of hand [(2)]. Therefore, therapies targeting inflammation may offer a novel approach for the management of hand OA. Tumor necrosis factor (TNF) inhibitors are a class of anti-inflammatory drugs that have been used in musculoskeletal conditions [(3-5)].

Objectives: To examine the efficacy of tumor necrosis factor (TNF) inhibitors on symptoms and structural outcomes in hand osteoarthritis.

Methods: The study was carried out according to PRISMA protocol. Ovid Medline, Embase and Cochrane Central Registry of Controlled Trials were searched from inception to October 2021 for randomized controlled trials examining the efficacy of TNF inhibitors in hand osteoarthritis. We performed quantitative extraction of data and risk of bias assessment for the eligible studies. Where data were available, mean difference was calculated and random effect meta-analysis was performed. Quality of the evidence was assessed using GRADE criteria.

Results: Four studies were identified involving 276 participants in total. There studies had low risk of bias and one study had some concerns. Meta-analysis showed that TNF inhibitors had no effect on pain at 4-6 weeks and 24-26 weeks and no effect on grip strength at 1 year (Table 1). There was no effect of TNF inhibitors on most of the clinical and structural outcomes. There was conflicting evidence for the effect of TNF inhibitors on radiographic progression, bone marrow lesion or erosive evolution at 12 months. Quality of evidence was low for the effect of TNF inhibitor on pain and moderate for grip strength.

Conclusion: Our systematic review found no effect of TNF inhibitors on clinical outcomes and the effect of TNF inhibitors on structural outcome over longer term is inconclusive. More clinical trials are needed to clarify the role of TNF inhibitors in the management of hand OA.

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Table 1. Effect of TNF inhibitor versus control on pain and grip strength

Study	scale	range	Mean (SD)	Mean (SD), extracted	Mean Difference (95% CI)	Number	Number	Meta-analysis result
			TNF[1] inhibitor	control		TNF[1] inhibitor	control	
Short term/pain								
Aitkin 2018	VAS[2]	0-100	-6.1 (22.7)	-4.1 (23)	-2.5 (-14 to 9)	40	41	-0.93 (-7.41, 5.55)
Chevalier 2014	VAS[2]	0-100	-19.3 (4.20	-16.8 (4.3)	-0.2 (-8.1 to 7.6)	38	35	
Long term/pain								
Kloppenburg 2018	VAS[2]	0-100	39.2 (24.7)	46.5 (23.4)	-5.7 (-15.9 to 4.5)	38	41	-3.82 (-11.46 to 3.83)
Chevalier 2014	VAS[2]	0-100			-1.4 (-13 to 10.1)	36	33	
Long term/grip strength								
Kloppenburg 2018	Dynamometer				0 (-2.2, 2.1)		41	-0.35 (-1.08, 0.37)
Verbruggen 2012	Dynamometer		0.8 (1.2)	1.2 (1.8)		30	30	

[1]Tumor necrosis Factor, [2]Visual Analogue Scale