REFERENCES:

- [1] Suarez-Almazor ME, Soucek J, Kelly PA, et al. Ethnic Variation in Knee Replacement: Patient Preferences or Uninformed Disparity? *Arch Intern Med.* 2005;165(10):1117-1124. doi:10.1001/archinte.165.10.1117

Figure 1. Meta-analysis describing the odds ratios of Black people using NSAIDs and Narcotic Analgesics compared to white people

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POS1098

PREVALENT COMORBIDITIES ASSOCIATED WITH CLINICALLY DIAGNOSED OSTEOARTHRITIS: A CASE-CONTROL ANALYSIS INCLUDING 1,936,792 PEOPLE

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Background: Osteoarthritis (OA) is the most common form of arthritis and a major cause of pain and disability worldwide. Individuals with OA have increased cardiovascular morbidity and mortality, and other comorbidities are also more common amongst them than in the general population. In this study, we examined the prevalence and timing of the diagnosis of co-morbidities prior to the clinical diagnosis of OA.

Objectives: To determine the odds of comorbidities in newly diagnosed OA cases versus matched controls in the up to 10 years prior to diagnosis.

Methods: Case-control study of people registered in the Information System for Research in Primary Care (SIDIAP). SIDIAP includes primary care records covering over 80% of the population of Catalonia, Spain.

Participants with an incident diagnosis of OA, based on ICD-10-CM disease codes, were matched to up to 4 controls by age (within 2 years), gender and primary care practice. The first diagnosis date of OA used the index date, with matched controls using the same index date, to retrospectively review for comorbidities. Patients were required to have at least 3 years continuous registration

prior to the index date. A total of 57 comorbidities were considered, based on prior knowledge and clinical consensus.

Descriptive statistics were used to obtain the demographic information about cases and controls. Counts of any comorbidity were calculated, and univariable and multivariable logistic regression were used to calculate odds ratios (ORs) and 95% confidence intervals (CIs) of individual comorbidities adjusted for age, gender and socio-economic status.

Results: In total, there were 455,494 OA cases and 1,481,298 matched controls. The cases and controls were similar with regards to age, gender and deprivation level.

The incident diagnosis of any comorbidity at any time prior to index date was 77% (n= 350,913) in cases versus 61% (n= 909,497) in controls.

The results from the multivariable analysis [Table 1] showed that OA patients had higher prevalence of many comorbidities up to 1 year prior to their diagnosis of OA compared to up to 10 years prior to diagnosis. They were most likely to be diagnosed with another musculoskeletal condition followed by neuro-psychiatric and metabolic and cardiovascular conditions. Conversely, patients with OA were less likely to be diagnosed with cancer up to 10 years prior to index date than matched controls.

Conclusion: Patients with OA have multiple chronic conditions. Our results found that the diagnosis of these other co-morbidities (particularly musculoskeletal and neuro-psychiatric conditions) were more likely to occur in the 1-year prior to their diagnosis of OA, compared to in the 10-year prior, except for lymphoma and solid malignancy. These results help us to further understand the relationship and timing of the development of multiple co-morbidities in patients with OA.

Table 1. Multivariable analysis at 1 year and 10 year prior to index date

Co-morbidity	Multivariable analysis 1-year prior (OR, 95% CI)	Multivariable analysis 10-year prior (OR, 95% CI)
Musculoskeletal conditions		
Ankylosing Spondylitis	3.12 (2.41, 4.05)	1.27 (1.12, 1.43)
Fibromyalgia	4.24 (3.96, 4.54)	1.85 (1.80, 1.91)
Rheumatoid Arthritis	2.67 (2.40, 2.97)	1.27 (1.20, 1.34)
Back/ neck pain	2.41 (2.38, 2.45)	1.76 (1.75, 1.78)
Neuro-psychiatric		
Anxiety	1.69 (1.65, 1.73)	1.23 (1.22, 1.24)
Depression	1.87 (1.81, 1.93)	1.25 (1.24, 1.27)
Irritable Bowel Syndrome	1.90 (1.71, 2.11)	1.28 (1.22, 1.34)
Migraine	1.81 (1.69, 1.94)	1.23 (1.20, 1.27)
Cancer		
Leukaemia	1.07 (0.88, 1.30)	0.91 (0.82, 1.00)
Lymphoma	0.84 (0.68, 1.03)	0.90 (0.82, 0.99)
Solid malignancy	0.95 (0.91, 0.99)	0.95 (0.93, 0.97)
Other medical conditions		
Stroke	1.15 (1.10, 1.20)	0.95 (0.93, 0.97)
Hypertension	1.70 (1.68, 1.74)	1.26 (1.25, 1.28)
Diabetes	1.34 (1.30, 1.38)	1.07 (1.06, 1.09)
Obesity	1.96 (1.92, 2.01)	1.60 (1.58, 1.62)

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POS1099

EFFICACY OF INTRA-ARTICULAR CORTICOSTEROID INJECTIONS IN KNEE OSTEOARTHRITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Background: Knee osteoarthritis (OA) is a frequent degenerative disease representing an important health and economic burden. Symptomatic medical treatments available include intra-articular (IA) injections of corticosteroids (GC) but

their efficacy is debated. In addition, safety signals regarding cartilage damage with IA GC have been highlighted in a few studies.

Objectives: To perform a meta-analysis of studies assessing IA GC efficacy and safety in knee OA.

Methods: A systematic literature review and a meta-analysis of randomized controlled trials (RCTs) assessing the effect of GC IA injections versus other interventions (IA Hyaluronic Acid, IA placebo, IA NSAID, oral NSAID or physiotherapy) in knee OA was performed. The effect of the interventions on pain and function were extracted from the single studies and pooled and are presented as short term (<6weeks), medium term (6-24 weeks) and long term (>24 weeks) follow-up period. Standardized mean differences (SMD) are reported.

Results: Of 520 studies screened, 23 were included in the SLR and 14 subsequently included in the MA. While IA GC showed a superior effect compared to control on both pain (SMD -0.61 (95% CI -1.25, 0.03)) and function (SMD -1.02 (95% CI -2.14, 0.10)) in short term follow-up; long term follow-up analysis favored controls (IA HA, IA NSAID, physiotherapy) for both pain (SMD 0.68 (95% CI -0.11, 1.47)) and function (SMD 0.88 (95% CI -0.36, 2.12) outcomes (Figure 1). No difference was found between interventions in the medium term. Safety data were reported in 18/23 studies (n= 1936/2314 patients); and side effects were reported as follows: arthralgia (69 IA GC patients, 146 IA HA patients, and 20 saline patients); site injection pain (7 in the IA GC group, 2 in the IA saline group, 14 in the IA HA group); 16 post injection knee swelling without signs of septic arthritis in the IA GC group and 24 in the IA HA group. In one study assessing cartilage effects of GCs, the rate of cartilage loss was greater in the GC group with a reduction of cartilage thickness at 2 year compared to placebo group. No difference was observed in the progression of cartilage denudation or bone marrow lesion. On the contrary, another study showed no effect of injections on the cartilage structure.

Conclusion: We demonstrate in this work that IA GC injections reduce pain and improve function in the early phase (≤ 6 weeks) of treatment. In the long term

(≥ 24 weeks), other intervention such as IA HA injections or physiotherapy seem to be more efficient, but this effect was largely driven by single studies with large effect sizes and the comparators were heterogeneous.

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POS1100 THE IMPACT OF CARDIOVASCULAR COMORBIDITIES ON KNEE OSTEOARTHRITIS PROGRESSION

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Background: Osteoarthritis (OA) pathophysiology is a complex and evolving subject, resulting in different phenotypes¹. There is a known association between cardiovascular risk factors (CVRF) and OA, but its subclinical mechanism remains under-documented². Pursuing this logic of direct systemic effect on joints by CV comorbidities², new therapeutic approaches could be reached.

Objectives: To determine the impact of CV comorbidities on knee OA, based on radiographic rate of progression and the need for total knee arthroplasty (TKA).

Methods: Cohort retrospective study among non-obese patients with primary knee OA, seen at a Portuguese hospital between 2017 and 2020. Clinical records were reviewed for sociodemographic and clinical data [age at the diagnosis, radiographic scoring through Kellgren Lawrence (KL) classification system at baseline (diagnosis) and 5 years later, KL progression and time to TKA]. CVRF such as Essential Arterial Hypertension (EHA), Dyslipidemia (DLP) and Type 2 Diabetes Mellitus (T2DM) prior to the OA diagnosis, as well as medication history were also recorded. Comparison of both cohorts, with and without the mentioned CVRF, was performed.

Results: A total of 304 patients with knee OA were eligible, 86 (28.3%) men and 218 (71.7%) women. Of those with CVRF (n=169), 121 (71.6%) were women and the mean age was 74.47 $\pm$ 0.59 years. Among them, 129 (76.4%) had EAH, 122 (72.2%) had DLP, and 52 (30.8%) had T2DM. Five (3%) were treated with fenofibrate, 114 (67.5%) with statins, 40 (23.7%) with metformin, and 4 (2.4%) with liraglutide. Of those without CV risk factors (n=135), 97 (71.9%) were women and the mean age was 71.36 $\pm$ 0.83 years. The presence of CVRF was associated with higher KL score (moderate to severe) at baseline [OR=2.118 (CI 95%: 1.264-3.549)] and 5 years later [OR=14.960 (CI 95%: 3.439-65.079)], faster KL progression, i.e., 2-grade worsening [OR=2.755 (CI 95%: 1.205-6.299)], and greater need for TKA [OR=3.781 (CI 95%: 2.257-6.335)]. However, there was no association between the number of CVRF and progression of the KL score nor the rate of this progression, as well as between the number of CVRF and the need for TKA. EAH was associated with higher KL score at baseline [OR=1.819 (CI 95%: 1.108-2.987)] and 5 years later [OR=17.921 (CI 95%: 2.382-134.835)] but not with faster KL progression. It also associated with a greater need for TKA [OR=3.320 (CI 95%: 1.197-5.750)]. DLP was associated with higher KL score at baseline [OR=1.843 (CI 95%: 1.120-3.030)] and 5 years later [OR=7.709 (CI 95%: 1.772-33.530)], as well as with faster KL progression [OR=2.560 (CI 95%: 1.249-5.246)], and greater need for TKA [OR=2.493 (CI 95%: 1.457-4.268)]. T2DM was associated with higher KL score 5 years after OA diagnosis [OR=1.103 (CI 95%: 1.059-1.148)], but not with KL score at baseline nor the occurrence of KL score progression during those first 5 years of disease or the need for TKA. Metformin, liraglutide, statins or fenofibrate use (either compounded or isolated) showed no statistically significant association with any of the following: KL score at baseline and 5 years later, occurrence of KL progression, and need for TKA. Time to TKA was not statistically different between patients with or without these medications. The number of medications used was not associated with KL progression or the need for TKA.

Conclusion: CVRF contribute globally to OA progression. Patients with EAH and DLP showed worse radiographic expression of OA features and greater need for TKA, with DLP patients having faster KL progression. The presence of more than one CVRF was not associated with an increased disease progression, and cardiovascular therapeutic medications were not associated with an overall protective role. This study highlights the importance of acting on preventive measures for CVRF, in OA management.

REFERENCES:

- Deveza *et al.* Clinical and experimental rheumatology vol. 37 Suppl 120,5 (2019): 64-72.
- Orcha *et al.* Revue du Rhumatisme vol. 87 Suppl 1 (2020): A244.

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Figure 1. Knee pain outcome at short term (≤ 6 weeks) (A), medium term (> 6 & < 24 weeks) (B), and long term (≥ 24 weeks) (C) follow up.