of their daily living and their physical health-related quality of life. Greater tendency to catastrophize in the face of pain and higher depression levels were associated with more severe pain suggesting that psychological interventions aiming at reducing these factors could be beneficial for some patients with TMO.

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FRI0609-HPR NUTRIENTS INTAKE CONDITION RELATES TO MAINTENANCE LOW DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS DURING 6 YEARS: TOMORROW STUDY

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Background: We have previously reported that nutritional intake status might relate to disease activity (1). Nutritional survey on prospective cohort study in rheumatoid arthritis (RA) patients and information about relationship between nutritional intake status and disease activity was very limited.

Objectives: This study aimed to obtain data from a cohort study for new nutritional therapy in RA patients.

Methods: We used TOMORROW cohort study data which conducted from years of 2010 to 2020. Two hundred and eight RA patients, and 205 non-RA sex and age matched controls were investigated, and we analyzed data from 2011 to 2017. Nutritional intake status was compared between who maintain lower disease activity during 2011 to 2017 (LDA group) and being higher disease activity even once in 2011 to 2017 (non-LDA group). Disease activity was evaluated by DAS28-ESR in every year and nutritional intake status was surveyed by brief self-administered diet history questionnaire (BDHQ) in 2011 and 2017.

Results: In RA patients, the change value from 2011 to 2017 of iron (odds ratio; 2.37), thiamin (OR; 2.96) and folic acid (OR; 3.16) intake which adjusted by energy intake, age, rheumatoid factor and medication status were extracted as independent factors for maintain LDA by multivariate logistic regression. These nutrients intake in RA patients was significantly lower than control both in 2011 and 2017. In RA patients, iron and folic acid intake in LDA group was significantly lower than non-LDA group in 2011. Folic acid intake was increased in LDA group and decreased in non-LDA group over time, and these nutrients showed significant differences in change value between LDA group and non-LDA group ($p < 0.05$).

Conclusion: The overtime change value in iron, thiamin and folic acid related to maintain six years low disease activity in RA patients.

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FRI0610-HPR B-ADRENORECEPTOR BLOCKING DRUGS ASSOCIATE WITH LOWER RISK OF KNEE OSTEOARTHRITIS AND KNEE PAIN CONSULTATIONS IN PRIMARY CARE: A PROPENSITY SCORE MATCHED COHORT STUDY USING THE CLINICAL PRACTICE RESEARCH DATALINK.

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Background: The pharmacologic management of OA is centred around optimising pain control but first-line analgesics only have modest efficacy¹. Findings from several studies suggest that β -adrenoreceptor blocking drugs (β -blockers) have anti-nociceptive effects^{2,3}. However, evidence for the benefits of β -blockers in the context of OA pain is scarce. We recently demonstrated, for the first time, an association between beta-blockers and lower pain severity, and less opioid analgesic use in a secondary analysis of data for community dwelling adults with large-joint lower OA⁴. This association, however, was not confirmed in a hospital-based study⁵.

Objectives: We examined [1] the association between β -blocker prescription and first primary care consultation for knee OA, hip OA, knee pain, and hip pain and [2] the classes of β -blocker drugs that reduce the risk of these outcomes.

Methods: This was a cohort study using data from the UK Clinical Practice Research Datalink. Participants aged ≥ 40 years, in receipt of ≥ 2 β -blocker prescriptions within 60 days were matched by age, sex, and propensity score (PS) for β -blocker prescription to one control using greedy nearest neighbour matching. Participants with chronic painful conditions, contra-indications to β -blockers,

maintenance analgesic prescriptions, and with <2-years registration before index or matched follow-up start date were excluded. Cox proportional hazard ratios (aHRs) and 95% confidence intervals (CI) were calculated to examine the associations adjusted for other covariates. Analyses were stratified according to β -blocker classes.

Results: Data for 223,436 PS-matched exposed and un-exposed participants were included. β -blocker prescription associated with a significantly reduced risk of knee OA, knee pain, and hip pain consultations with aHR(95%CI) 0.90(0.83–0.98), 0.88(0.83–0.92), 0.85(0.79–0.90) respectively. The reduction in hip OA lacked statistical significance (aHR 95%CI 0.94; 0.83–1.07) (Table 1). On stratified analysis, propranolol and atenolol had a statistically significant protective effect on knee OA and knee pain consultations with aHRs between 0.78 and 0.91 (Figure 1).

Table 1. The association between β -blocker prescription and incident osteoarthritis and joint pain

Outcomes	Exposed	Events (n)	Person-time	Event rate (95% CI)*	HR (95% CI) [†]
Knee OA	No	986	262,003	3.76 (3.54 – 4.01)	1.00
	Yes	1,101	307,231	3.58(3.38 – 3.80)	0.90(0.83 – 0.98)
Hip OA	No	451	263,753	1.71(1.56 – 1.87)	1.00
	Yes	530	310,045	1.71(1.57 – 1.86)	0.94(0.83 – 1.07)
Knee pain	No	3,074	255,003	12.06(11.64 – 12.49)	1.00
	Yes	3,560	297,027	11.99(11.60 – 12.37)	0.88(0.83 – 0.92)
Hip pain	No	1,767	259,515	6.81 (6.50 – 7.13)	1.00
	Yes	1,981	304,454	6.51 (6.23 – 6.80)	0.85(0.79 – 0.90)

OA; osteoarthritis, *1,000 person-years, [†]PS matched and, additionally adjusted for age, number of GP consultations, hospital out-patient referrals, hospital admissions in the 12 month period preceding cohort entry, total number of GP consultations for knee or hip injury prior to cohort entry and non-osteoporotic fractures.

[†]Comparison group is unexposed to β -blockers; size of the square is proportional to number of events.

Figure 1. The association between individual β -adrenoreceptor blocking drugs and incident knee osteoarthritis and knee pain[†]Comparison group is unexposed to β -blockers; size of the square is proportional to number of events.

Conclusion: β -blockers appear to reduce consultations for knee OA, and knee or hip pain. Our results imply that, atenolol might be used preferentially for the treatment of people with cardiovascular comorbidities, while, propranolol with its' anti-anxiety effect may be a suitable analgesic in people with OA and comorbid anxiety.

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FRI0611-HPR EUROPEAN PRESCRIBERS' PERSPECTIVES ON BIOSIMILARS

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Background: Biosimilars are highly similar, but not identical to originator biologics. In an increasingly resource-constrained environment, switching patients from originator biologics to biosimilars is a growing practice in many jurisdictions. Though automatic substitution of originator biologics with biosimilars is rare in Europe, this practice excludes physicians from decisions regarding the treatment of their patients.

Objectives: As countries seek to control health costs and expand access to biologic therapies, building physician confidence in biosimilars is critical to promoting their use and reaping the cost benefits. This survey will empirically document their perspectives on biologic substitution. These findings may serve as a resource for countries in developing biosimilar policies which build physician confidence in biosimilars.

Methods: The Alliance for Safe Biologic Medicines (ASBM) commissioned 15-minute web-based surveys among biologic prescribers in 6 Western European countries. Respondents must prescribe biologic medicines, must practice in France, Germany, Italy, Spain, Switzerland, or United Kingdom, must specialize in one of 10 practice areas: Dermatology, Endocrinology, Gastroenterology, Hematology Oncology, Immunology, Nephrology, Neurology, Oncology, Ophthalmology, Rheumatology. This survey is a refresh of one conducted in 2013 (n=470) available at www.safebiologics.org/surveys.

Results: 579 responses were received, 14% from Rheumatologists (n=80). Biosimilar familiarity was high, increasing from 76% to 90% from the 2013 survey; with Rheumatologists the most familiar (99%). Similarly, the % of physicians who felt sole treatment decision authority was very important or critical had increased from 72% to 82%; among Rheumatologists again this figure was higher (85%). This pattern was found across many questions, for example the importance of retaining authority to prevent a substitution (a jump from 74% in 2013 to 84% in 2019 saying "very important or critical", with Rheumatologists higher than average at 90%). Rheumatologists had a higher than average comfort level prescribing biosimilars to new patients, but were the least comfortable with a third party switching their patient for non-medical reasons (e.g. cost): 49% were "very uncomfortable" compared to an average of 29% across specialties.

Conclusion: European physicians have increased their familiarity with biosimilars since 2013, with Rheumatologists the practice area with greatest familiarity. After 13 years of experience with biosimilars, Europe's prescribers consider maintaining physician control of treatment decisions to be highly and increasingly important; Remain uncomfortable with switching a patient to a biosimilar for non-medical reasons; Are highly (and increasingly) uncomfortable with a non-medical substitution performed by a third party. When looking specifically at Rheumatologists, these trends are even more pronounced.

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HPR Interventions (educational, physical, social and psychological)

FRI0612-HPR EFFECT OF THERMOFORMABLE ORTHOSES ON FOOT FUNCTION IN RHEUMATOID ARTHRITIS PATIENTS: PRELIMINARY RESULTS FROM AN OPEN CLINICAL TRIAL.

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