Conclusion: Our results from this real-world RA cohort suggest that monotherapy with bDMARDs is not associated with incident DIP OA but may increase the risk of radiographic progression of existing DIP OA when compared to csDMARDs.

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POS0123

NEUROPATHIC PAIN SYMPTOMS IN INFLAMMATORY HAND OSTEOARTHRITIS(OA) LOWERS HEALTH RELATED PHYSICAL QUALITY OF LIFE AND MAY REQUIRE ANOTHER APPROACH THAN ANTI-INFLAMMATORY TREATMENT

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Background: Pain is a common, difficult to manage symptom in hand osteoarthritis (OA). Multiple pain mechanisms may play a role in hand OA.

Objectives: To investigate presence of neuropathic pain symptoms in patients with inflammatory hand OA, characteristics of those patients, their impact on health related quality of life (HR-QoL), and the influence of anti-inflammatory treatment on neuropathic pain symptoms.

Methods: Data from a randomised, double-blind, placebo-controlled trial of prednisolone including 92 patients with hand OA fulfilling ACR criteria were used. At baseline patients had signs of synovial inflammation, a VAS finger pain of ≥ 30 mm and who flared ≥ 20 mm upon NSAID washout. The primary endpoint was VAS finger pain (0-100) at week 6.

Neuropathic pain symptoms were measured at baseline and week 6 using the validated painDETECT questionnaire, consisting of questions on pain quality, pain intensity over time and radiating pain. Scores range -1 to 38 and patients are classified as having unlikely (<13), indeterminate (13-18) and likely (>18) neuropathic pain. HR-QoL was measured with physical component scale (PCS) of Short-Form 36 (SF36; 0-100), comorbidities with the Self-administered Comorbidities Questionnaire (SCQ; 0-45), radiographic severity with Kellgren-Lawrence (KL) sum score (0-120), and treatment response with OMERACT-OARSI responder criteria.

Association of patient characteristics with neuropathic pain symptoms was analysed with univariate and multivariate ordinal logistic regression, with painDETECT as dependent variable. Association of neuropathic pain symptoms with HR-QoL was analysed with multivariate linear regression, adjusted for age, sex, BMI, VAS finger pain, SCQ score and KL sum score, with PCS as dependent variable. Response of neuropathic pain symptoms and VAS pain to prednisolone was analysed with generalised estimating equations. Association of neuropathic pain symptoms at baseline with response to treatment was analysed using χ^2 -tests and GEE.

Results: 91 patients had complete painDETECT data at baseline (mean painDETECT score 12.8 [SD 5.9]). Scores were <13 in 53%, 13-18 in 31% and >18 in 16%. Higher painDETECT score categories were associated with less radiographic damage, more comorbidities, female sex and higher VAS finger pain in multivariate analysis. (table 1)

Patients with painDETECT scores >18 had a lower HR-QoL (PCS -6.5 [95%CI -10.4 to -2.6]) than those with painDETECT scores <13.

PainDETECT scores remained unchanged throughout the trial in both prednisolone-treated and placebo-treated patients, and there was no between-group

difference at week 6. VAS pain improved more in the prednisolone group than in the placebo group (mean between-group difference -16.5 [95%CI -26.1 to -6.9]) (figure 1). No association between the presence of neuropathic pain symptoms at baseline and OMERACT-OARSI response to treatment was found.

Conclusion: Patients with inflammatory hand OA and additional neuropathic pain symptoms are more often female and have more comorbidities, and report a lower QoL, than those without. Neuropathic pain symptoms seem unresponsive to anti-inflammatory therapy. Clinicians should be aware of neuropathic pain symptoms in their patients as they might benefit from additional, specific treatment.

Table 1. Ordinal logistic regression with painDETECT categories as dependent variable

Variables	Mean (SD) N=91 (100%)	Odds ratio (95% CI)
Age	64 (9)	0.96 (0.90 to 1.02)
Female sex; N (%)	72 (79%)	3.84 (1.19 to 12.39)*
BMI; median (SD)	27 (24 to 29)	0.97 (0.89 to 1.06)
SCQ score; median (SD)	2 (1 to 5)	1.04 (1.04 to 1.36)*
VAS finger pain	53.8 (2.1)	1.02 (1.00 to 1.04)*
KL sum score	37 (16)	0.96 (0.93 to 1.00)*

*p<0.05. BMI = body mass index. SCQ = Self-administered comorbidities questionnaire. VAS = visual analog scale. KL= Kellgren-Lawrence.

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Figure 1

Figure 1. Mean score at week 0 and week 6, per treatment arm, for VAS finger pain and PainDETECT. Placebo shown in dashed line, prednisolone 10 mg daily in solid line. Whiskers indicate 95% CI.

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POS0124

QUALITY OF LIFE FOR PATIENTS WITH KNEE OSTEOARTHRITIS WITH OR WITHOUT PAIN SENSITIZATION

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Background: Patients with central sensitization (CS) may have poorer quality of life (QOL).

Objectives: We aim to evaluate whether different ways of classifying CS have an impact on a patient's QoL among patients with knee osteoarthritis (KOA).

Methods: We use the baseline pre-operative data from a cohort of consecutive KOA patients enlisted for knee replacement surgery (1). We collected demographics, number and position of painful sites of body. Quality of life was assessed by the Medical Outcome Survey Short-Form 36 (SF-36). Pain pressure threshold was measured at volar side of right forearm. We classify CS using three sets of criteria: 1). widespread pain (pain involving both upper/ lower trunk, and both side of body), 2). lowest 10th percentile of pressure pain threshold (PPT) measured at the forearm and 3) the painDETECT questionnaire $\geq 13/38$.

Results: Of 233 patients (79.8% women) with complete data set for analysis, mean (standard deviation, SD) age was 66.0 (8.3) years. 15.5%, 25.8%, and 4.7% of patients were classified as having CS by widespread pain, low PPT and painDETECT criteria. KOA patients with CS have poorer QoL compared with those without. Low PPT identified patients with poorer general health, while widespread pain and PainDETECT criteria identified patients with poorer QoL in more domains including vitality mental health (Table 1).

Conclusion: KOA patients who have CS have poorer QoL compared to those without. Different criteria defined patients with different pattern of QoL impacts. In general, KOA patients who have CS have poorer QoL compared to those without. This highlight the importance of additional impact of CS to QoL.

Table 1. Quality of life comparing patients with or without CS

	Widespread pain		lowest 10 th percentile PainDETECT $\geq 13/38$ of forearm PPT			
	No (n= 197)	Yes (n= 36)	No (n= 206)	Yes (n= 27)	No (n= 222)	Yes (n= 11)
SF-Physical functioning	39.0 (21.8)	32.6 (19.0)	38.7 (21.8)	32.8 (17.8)	38.8 (21.3)	22.3 (19.2)*
SF-Role physical	21.6 (33.3)	8.3 (22.4)*	20.3 (32.2)	13.9 (32.0)	19.7 (32.6)	15.9 (23.1)
SF-Bodily pain	36.3 (19.5)	28.1 (14.0)*	35.1 (19.5)	34.0 (14.7)	35.5 (19.1)	24.2 (13.3)
SF-General health	68.9 (21.1)	64.6 (20.3)	69.4 (20.6)	59.3 (22.4)*	68.7 (20.7)	58.4 (25.7)
SF-Vitality score	69.7 (22.4)	59.3 (20.4)**	68.8 (22.5)	63.1 (21.1)	69.0 (21.8)	51.8 (29.2)*
SF-Social functioning	57.7 (37.2)	48.3 (39.2)	57.3 (38.0)	48.1 (33.7)	56.7 (37.7)	47.7 (42.1)
SF-Role emotion	86.1 (34.4)	86.1 (33.2)	86.7 (33.5)	79.0 (38.3)	86.9 (32.9)	63.6 (50.5)
SF-Mental health	82.4 (16.2)	77.4 (19.2)	82.2 (16.8)	77.8 (15.8)	82.2 (16.3)	70.2 (22.2)*
Physical component score	32.5 (10.1)	30.3 (8.0)	32.4 (9.8)	30.6 (9.7)	32.4 (9.9)	28.8 (8.7)
Mental component score	53.0 (10.5)	48.3 (10.0)*	52.7 (10.6)	48.5 (9.2)	52.6 (10.2)	44.2 (13.7)**

*p<0.05; **p<0.01

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POS0125

CALCULATING RISK OF HAND OSTEOARTHRITIS PROGRESSION AT TEN YEARS THROUGH A PREDICTION MODEL

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Background: Hand osteoarthritis (OA) is a chronic, progressive disease, commonly affecting middle aged women. OA at the interphalangeal joints (IPJs) or the thumb base are considered different disease subsets (1). Few studies have investigated individual risk factors for IPJ OA progression (2). Prediction models can be used to calculate overall disease risk from multiple risk factors. This can guide prevention and treatment options.

Objectives: Develop and internally validate a prediction model for IPJ OA progression.

Methods: Data from the Chingford 1000 Women Study (Chingford Study), the largest population-based cohort worldwide assessing hand OA, was used. It is representative of the middle-aged female population in the United Kingdom (3). At baseline, 1,003 women aged 45 to 64 years' old were recruited, and 693 measurements taken. Hand radiographs were taken at baseline and after ten years, read using the Kellgren-Lawrence (KL) atlas (inter-observer correlation: ≥ 0.7 (4)).

For the current study, participants must have had OA (KL ≥ 2 in ≥ 1 IPJ) on baseline hand radiographs. Participants with KL 4 in all 16 IPJs at baseline were excluded. Risk factors from the Chingford Study at baseline were selected by biological plausibility, literature evidence (2), and hand surgeons' consensus (5): age (years), occupation (manual versus non manual), OA in ≥ 1 thumb base (KL ≥ 2 versus KL<2), body mass index (BMI) (kg/m²), family history of hand OA (yes versus no). The outcome was defined on an ordinal scale for the number of IPJs (up to >5 IPJs) with OA progression (increase by KL ≥ 1), at ten years'.

The prediction model was developed using a penalized proportional odds logistic regression. Odds ratios (95% confidence intervals) were reported for each risk factor. The model was internally validated using 2,000 bootstrap iterations. Model performance was assessed for discrimination (C-statistic), and calibration (C-slope). 3.5% of data was missing, and complete case analysis was used.

Results: 699 women had baseline hand radiographs: 38 were unreadable, 459 had no IPJ OA. Seven participants had missing data (occupation: 5, BMI: 1, family history: 1) and were excluded. 195 participants were included this study. Median age at baseline was 59 (interquartile range: 8) years.

181 (92.8%) participants had OA progression at 10 years (Figure 1). Thumb base OA (odds ratio: 1.32 (0.93 to 1.88)) was most strongly associated with IPJ OA progression (Table 1). C-statistic was 0.57, and calibration slope was 1.38 for the optimism-corrected model.

Conclusion: More stringent cut-offs for OA progression would be clinically useful. It was only weakly possible to predict which participants with IPJ OA would progress. This suggests that other risk factors, such as gender, ethnicity and genetics, may be predominant.

Figure 1. Hand interphalangeal joints with osteoarthritis progression (Kellgren-Lawrence grade ≥ 1) at 10 years follow up

Table 1. Odds ratios for risk factors

Risk factor	Odds ratio (95% confidence interval)
Age (years)	1.02 (0.99 to 1.06)
Occupation (manual versus non manual)	0.88 (0.60 to 1.29)
Thumb base OA (Kellgren-Lawrence grade ≥ 2 versus <2)	1.32 (0.93 to 1.88)
Family history of hand OA (yes versus no)	1.03 (0.72 to 1.45)
Body mass index (kg/m ²)	1.04 (0.99 to 1.09)

OA: Osteoarthritis

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