SAT0670 THE PREVALENCE OF NEUROPATHIC PAIN-LIKE SYMPTOMS AND ASSOCIATED RISK FACTORS IN THE NOTTINGHAM COMMUNITY: A CROSS-SECTIONAL STUDY

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Background: Knee pain (KP) affects 1 in 4 adults over the age of 50. Aside from structural joint changes, person-specific factors influence the KP experience. Increased central sensitisation of neural pathways due to localised joint pain or ineffective descending inhibitory mechanisms can cause an enhanced pain response and neuropathic pain-like (NP) symptoms. Understanding these person-specific factors and how they modulate the pain experience might help profile different KP and NP phenotypes.
Objectives: a) To determine the prevalence of NP in a KP community population b) to identify significant risk factors associated with NP and those with both NP and non-NP KP.
Methods: 9,513 men and women, aged 40+ years, were recruited from the East Midlands region (United Kingdom) via postal questionnaire. The questionnaire included sections on KP severity (numerical rating scale) and type (NP versus nociceptive) using the modified PainDETECT Questionnaire (mPDQ); quality of KP using the intermittent and constant osteoarthritis pain (ICOAP) instrument) as well as other risk factors including age, body mass index (BMI), injury, pain catastrophizing scale (PCS) and mental wellness (Hospital Anxiety and Depression Scale). KP participants were those who reported *"knee pain for most days of the past one month"* while likely NP was mPDQ scores of $\geq$13 and definite NP, $\geq$19. Differences between groups were assessed using t-tests for continuous data and chi^2 for categorical data. We used multinomial regression analysis to determine the odds ratios (ORs) of risk factors with 95% confidence intervals (CI) and significance set $p<0.05$.
Results: The prevalence of definite NP in the Nottingham Community was 366 (13.62%). There were more women (p=0.04) and higher BMI (p<0.001) in KP vs. non-KP responders but no age difference (p>0.05). When comparing the neuropathic-like KP to non-neuropathic KP responders, significant risk factors after adjustment for age, BMI, gender and pain severity included: anxiety (OR 3.17 (95% CI 2.38;4.23)); depression (OR 2.99 (95% CI 2.14;4.19)); PCS in highest tertile (OR 5.39 (95% CI 2.94;9.88)); fibromyalgia (OR 4.06 (95% CI 2.48;6.66)) and previous knee injury (OR 1.5 (95% CI 1.12;2.00)). When comparing neuropathic-like KP to non-KP responders, anxiety (1.74 (95% CI 1.31; 2.30), depression (2.05 (95% CI 1.40; 3.01), PCS 3.78 (95% CI 2.57; 5.56)), fibromyalgia (OR 1.94 (95% CI 1.10; 3.40)) and previous injury (OR 1.35 (95% CI 1.05; 1.73)) were significant risk factors after adjustment.
Conclusions: This is the first population based cross-sectional study in the UK to determine prevalence of NP in people with KP. The results suggest that both psychological factors (depression, anxiety, high catastrophising) and peripheral risk factors (injury) associate with NP reporting. These factors can augment pain sensitivity and produce an amplified response via central and peripheral pathways. Phenotypes based on these risk factor profiles may warrant specific management in KP populations.
Acknowledgements: Arthritis Research UK Grant Refs: 20777, 20194
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4930

SAT0671 THE IMPACT OF OBESITY ON TREAT TO TARGET GOALS AND FUNCTIONAL ABILITY IN THE ERAS/ERAN UK PROSPECTIVE COHORTS

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Background: The links between adipose tissue and inflammation on the one hand and obesity and joint dysfunction on the other, are well established. However, how these translate into clinical disease activity and functional disability in rheumatoid arthritis (RA), remains to be clearly defined.
Objectives: To investigate the association between BMI and 1. The achievement of disease remission or low disease activity and 2. Functional ability, in RA.
Methods: Data from two consecutive UK multi-centre RA inception cohorts with similar design were used: the Early RA Study (ERAS) and Early RA Network (ERAN). Recruitment figures/median follow up for ERAS and ERAN were 1465/10 years (maximum 25 years), and 1236/6 years (maximum 10 years) respectively. Standard demographic and clinical variables were recorded at baseline and then annually until loss to follow-up or the end of study follow-up. Multilevel logistic regression analysis was used with either remission (R-DAS) or low disease activity status (L-DAS) and health assessment questionnaire (HAQ, <1 vs $\geq$1) as the dependent categorical variables of interest in models adjusting for patient, disease-related clinical variables and recruitment year. BMI was examined in separate models as both a continuous and categorical predictor variable according to WHO definitions: underweight (BMI less than 18.5), normal (BMI between 18.5 and 25), overweight (BMI between 25 and 30) and obese (BMI greater than 30). BMI was included in the models relating to the same time point as the outcome assessed.
Results: Baseline BMI data from 2420 patients (90%) indicated that 40.0% had BMI scores in the normal range, 1.8% were underweight, 37.2% were overweight and 21.3% were obese. Mean BMI increased slightly over time from 26.5 at baseline to 26.8 at 2 years and then 27.1 at 5 years. In multilevel logistic models adjusting for age, sex, smoking status, antibody status, haemoglobin, erosions and year of recruitment, higher BMI was associated with reduced odds of achieving R-DAS (OR 0.97;95% CI 0.95, 0.99) (table) and L-DAS, although the latter did not reach statistical significance (OR 0.98;95% CI0.96, 1.00). Obesity was related to a significantly lower chance of R-DAS by 29% (OR 0.71;95% CI 0.55, 0.93) and L-DAS by 31% (OR 0.69;95% CI 0.55,0.87). Higher BMI was predictive of higher disability (OR 1.04;95% CI 1.01,1.06). More specifically, obesity increased the odds of higher disability by 63% (OR 1.63;95% CI 1.20,2.23) and in the same models, higher DAS was also strongly predictive of higher disability (OR 3.67;95% CI 3.41,3.95).

Table. Impact of BMI category on disease activity and functional ability in models adjusting for patient demographic, clinical & disease variables.

Independent predictors	MODELS		
	Remission DAS OR (95% CI) (n=1690)	Low DAS OR (95% CI) (n=1690)	HAQ OR (95% CI) (n=1688)
Age at disease onset (years)	0.98(0.97,0.99)	0.98(0.97,0.99)	1.03(1.02,1.05)
Female gender	0.32(0.25,0.41)	0.31(0.24,0.39)	2.47(1.76,3.45)
Past smoking (vs no smoking)	0.58(0.43,0.78)	0.58(0.44,0.77)	1.77(1.20,2.62)
Current smoking (vs no smoking)	0.56(0.42,0.75)	0.66(0.51,0.86)	1.73(1.19,2.51)
Positive rheumatoid factor/anti-CCP	0.83(0.65,1.06)	0.82(0.66,1.02)	1.09(0.79,1.49)
Disease activity score (DAS)	-	-	3.67(3.41,3.95)
Presence of baseline erosions	0.80(0.61,1.04)	0.85(0.67,1.09)	0.63(0.45,0.89)
Haemoglobin (g/dL)	1.03(1.01,1.04)	1.01(1.00,1.03)	1.00(0.98,1.02)
Recruitment year	1.09(1.07,1.11)	1.07(1.06,1.09)	1.09(1.07,1.12)
BMI category* (kg/m^2)			
-Underweight	1.28(0.73,2.26)	1.23(0.75,1.99)	1.83(0.99,3.38)
-Overweight	0.97(0.80,1.18)	0.88(0.74,1.05)	0.97(0.77,1.22)
-Obese	0.71(0.55,0.93)	0.69(0.55,0.87)	1.63(1.20,2.23)

**Reference category = normal BMI*

Conclusions: The findings support a link between higher BMI and worse clinical outcomes, namely disease activity and functional ability. Obesity was associated with lower levels of both remission and low disease activity states, and of higher disability. The findings highlight the importance of monitoring the patients' weight, screening and targeting obesity as part of routine clinical practice, in order to improve disease outcomes. This work provides clinical insights into the role of BMI on disease outcomes in RA.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.5510

SAT0672 RISK OF FRAGILITY FRACTURE AMONG PATIENTS WITH PSORIASIS: A POPULATION BASED MATCHED COHORT STUDY FROM THE UNITED KINGDOM

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Background: Psoriasis is a common inflammatory skin disease affecting 2–4% of the population and of these a subset will develop an associated inflammatory arthritis (psoriatic arthritis - PsA). An increased risk of osteoporosis has previously been reported in psoriasis patients but the risk of fracture in patients with both psoriasis and PsA has not been established.
Objectives: To estimate the effect of psoriasis, and PsA, on the risk of fracture using a large electronic primary health care database.
Methods: A matched cohort study was conducted utilizing data from the Clinical Practice Research Datalink, a large UK database of primary care medical records. The exposed population was defined as psoriasis patients aged over 40 years with an incident diagnosis between 1990–2004, who were followed up until 2015. Four unexposed patients were matched to each exposed based on age, sex and general practice. The incidence rate of fracture were calculated as the number of incident diagnoses per 10,000 person-years, stratified by sex. Hazard ratios (HR) and 95% confidence intervals were estimated using a Cox proportional hazards model to compare the hazard rate between the exposed and unexposed, adjusting for BMI, alcohol consumption, smoking status, Charlson comorbidity index and steroid use. Fracture risk was estimated for patients with both psoriasis and PsA, identified as patients with an incident diagnosis of psoriasis and a diagnosis of PsA between 1990–2004.
Results: 24,219 patients with psoriasis and 94,820 controls were included in the study. The mean age was 59 years at study entry and just over half (51%) of the patients were male. The incidence rate of fracture was 58.4 (95% CI:55.6–61.3) and 53.1 (51.7–54.5) per 10,000 person-years for the exposed and unexposed, respectively. After adjusting for confounding factors, patients with psoriasis had 12% increased risk of fracture (HR: 1.12; 95% CI: 1.06–1.19) compared to the matched unexposed group. The risk was slightly higher in males (1.22 (1.09–