SAT0482 SUBCLINICAL ENTHESOPATHY IN PSORIATIC PATIENTS AND ITS RELATION TO OTHER DISEASE PARAMETERS: AN ULTRASOUND STUDY

W. Gouda¹, M. Ismail², M. Doma², ¹Rheumatology, Aswan University, Aswan; ²Rheumatology, Al-Azhar University, Assiut, Egypt

Background: Psoriasis is a chronic immune-mediated inflammatory skin disease characterized by reddish, thick patches covered with marked silvery scaling [1]. In about 70% of the patients, psoriasis is present many years before the onset of psoriatic arthritis [2]. The early recognition and therapeutic intervention especially with the new biologic treatments is critical to prevent the destructive and debilitating changes of psoriatic arthritis [3]. Enthesitis is inflammation at the attachment of tendons and ligaments to the bones, has been suggested as being the unifying feature of psoriatic arthritis, and the disease can be considered an enthesitis associated disorder rather than primary synovitic arthropathy [4].

Objectives: We aimed to correlate the subclinical enthesitis in patients with psoriasis detected by means of power Doppler (PD) ultrasonography (US) with other disease parameters.

Methods: 50 persons with a definite diagnosis of psoriasis with no clinical evidence of arthritis or enthesitis were selected. All patients underwent complete clinical assessment included Psoriasis severity (PASI) score, body mass index (BMI), PDUS evaluation of Achilles, quadriceps, patellar entheses and plantar aponeurosis. US findings were scored according to the Glasgow Ultrasound Enthesitis Scoring System (GUESS).

Results: In 18 of 50 of patients (36%) PDUS found signs indicative of enthesopathy. The Achilles enthesitis had the highest number of PDUS signs of enthesopathy (33.3%), followed by distal patellar enthesitis (22.2%), proximal patellar enthesitis (16.7%), quadriceps enthesitis (16.7%), and plantar aponeurosis enthesitis (11.1%) with variable enthesial morphostructural abnormalities. The GUESS score was directly correlated with age ($p=0.012$), disease duration ($p=0.044$), PASI ($p=0.035$), BMI ($p=0.011$), hyperuricemia ($p=0.011$).

Demographic findings of the study population

Characters	Patients
Age (range) mean (SD)	(19–70) 33.8±11.2
Gender	
Female N (%)	31 (62)
Male N (%)	19 (38)
Disease duration (range) mean (SD)	(2–12) 7.7±3.4
PASI score mean ±SD (range)	21.1±7.3 (2.7–33.2)
BMI mean ±SD (range)	29.9±6.4 (19.5–42)
Rheumatoid factor: N of patients (%)	
Positive (>1/8)	4 (8%)
Negative	46 (92%)
SUA: N of patients (%)	
Normal (<6 mg/dl)	38 (76%)
Elevated	12 (24%)
Radiographic sacroiliitis: N of patients (%)	6 (12%)
Ultrasonographic findings: (%)	
Normal	32 (64%)
Abnormal (enthesitis)	18 (36%)

Conclusions: In addition to the importance of PDUS as a complimentary tool in examination of entheses in psoriatic patients, the presence of high PASI score together with the increased BMI and hyperuricemia in addition to long disease duration could be considered as predictive parameters for the presence of psoriatic enthesitis.

References:

- Menter A, Gottlieb A, Feldman SR, et al. Guidelines of care for the management of psoriasis and psoriatic arthritis, section 1. Overview of psoriasis and guide lines of care for the treatment of psoriasis with biologics. *J Am Acad Dermatol.* 2008; 58(5):826–50.
- Dimitrios TB, Ioannis OT. Psoriatic arthritis. In: Klippel JH, ed. *Primer on the Rheumatic Diseases*. Atlanta, GA: Arthritis Foundation, 1997: 175–179.
- Rozenblit M, Lebwohl M. New biologics for psoriasis and psoriatic arthritis. *Dermatol Ther.* 2009; 22(1):56–60.
- McGonagle D, Conaghan PG, Emery P. Psoriatic arthritis: a unified concept twenty years on. *Arthritis Rheum.* 1999; 42:1080–7.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.1595

SATURDAY, 17 JUNE 2017

Osteoarthritis

SAT0483 OSTEOARTHRITIS (OA) AND SOCIO-ECONOMIC STATUS (SES) PREDICTS THE ONSET OF COMORBIDITIES LINKED TO FREQUENT HEALTHCARE CONSULTATION

R. Hayward¹, K. Kaur², R. Wilkie¹. ¹Research Institute for Primary Care & Health Sciences; ²Medical Student, Keele University, Keele, United Kingdom

Background: OA is the most common joint condition, the fourth leading cause of disability globally and the fastest increasing major health condition. In older adults, OA frequently coexists with other morbidities, but the temporal nature is unclear. There is abundant evidence that markers of low SES are associated with poor outcomes among people with musculoskeletal conditions, however the mechanism linking comorbidity may vary with SES.

Objectives: To examine if OA predicted the onset of comorbidities that are the reason for frequent consultation to primary care, and if this association was moderated by SES.

Methods: Cohort study combining questionnaire data at two time points (2005, 2008) in the North Staffordshire Osteoarthritis Project, and medical record data from 2000 to 2005 (n=3910). OA was defined by consultation to primary care for OA between 2000 and 2005, and the indication of moderate to extreme pain interference in the questionnaire (2005). Logistic regression examined the association between OA and the onset of seven comorbidities (anxiety, depression, widespread pain (WP), insomnia, cognitive impairment, neurosis, stress between 2005 and 2008) and restricted social participation, first unadjusted and then adjusting for putative confounders (comorbidity, socio-demographic and lifestyle factors). Moderation of the association between OA and new onset comorbidity by change in income, education and area-level deprivation was examined by including interaction terms in regression and stratified analyses. Results were reported as odds ratios with a 95% Confidence Interval (OR; 95% CI).

Results: Mean age was 63, 55% were female, and 942 (24%) had OA. In the unadjusted analysis, OA was significantly associated with new onset of seven comorbidities ($p<0.05$). After adjusting for confounders, OA was associated with the onset of WP (2.49; 1.96–3.17) and insomnia (1.58; 1.14–2.19). There was a significant non-multiplicative interaction between OA and income and new onset cognitive impairment ($P=0.047$); new onset of cognitive impairment in those with OA whose income remains adequate 29.1% of 38.1% in those with OA whose income remains inadequate), and between OA and education and new onset WP ($P=0.012$; new onset in those with OA and secondary education only was 37.4% of 50% in those with OA and had more than a secondary education).

Conclusions: Consulters for OA were more likely to develop new physical and psychological comorbidities that lead to more frequent consultation to primary care than those without OA. Whilst confounders explained some of these associations, OA consulters may benefit from more proactive strategies to prevent further morbidity. Despite no significant multiplicative interactions, there were differences in the prevalence of new onset of morbidity in those with OA when stratified by SES. Onset of cognitive impairment was associated with inadequate income but WP was associated with those with higher education suggesting a “worried well” population seen both in other health surveys and in screening. OA and baseline morbidities were higher with lower SES and further exploration across the life-course will help to establish the role of SES on the natural history OA.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.2106

SAT0484 LOW MAGNESIUM INTAKE IS ASSOCIATED WITH INCREASED PAIN IN SUBJECTS WITH RADIOGRAPHIC KNEE OSTEOARTHRITIS: DATA FROM THE OSTEOARTHRITIS INITIATIVE

A. Shmagerl¹, N. Onizuka¹, T. Vo², L. Langsetmo², K. Ensrud^{3,4}, R. Foley⁵, P. Valen^{1,6}. ¹Medicine/Rheumatology; ²School of Public Health; ³Medicine, University of Minnesota; ⁴Medicine, VA Medical Center; ⁵Nephrology/Medicine, University of Minnesota; ⁶Medicine/Rheumatology, VA Medical Center, Minneapolis, United States

Background: Osteoarthritis pain appears to be caused, at least in part, by alterations in peripheral and/or central nociceptive pathways.[1] As magnesium is a known mediator of nociception, we hypothesized that low magnesium intake may be associated with increased pain in radiographic knee OA.

Objectives: To evaluate whether magnesium intake is associated with knee pain in radiographic knee osteoarthritis.

Methods: We investigated the associations between knee pain and magnesium intake from food and supplements in 2549 participants with prevalent radiographic knee OA (Kellgren-Lawrence score ≥ 2) in the Osteoarthritis Initiative cohort.[2] WOMAC pain scores in the affected knee were reported annually with total follow up period of 48 months. Magnesium intake was assessed at baseline by food frequency questionnaire and dietary supplement questionnaire, and expressed in gender-specific calorie-adjusted quintiles. Analyses used generalized linear mixed effects models with repeated measures.

Results: Among participants with baseline radiographic knee OA the mean total magnesium intake was 310 mg/day (SD 133) for men, and 288 mg/day (SD

118) for women, with 68% of men and 44% of women below the estimated average requirement (EAR). The mean WOMAC pain score at 0, 12, 24, 36, and 48 months of follow up was 3.5 (SD 3.8), median score 2 (IQR 0; 6). After adjustment for age, gender, BMI, caloric intake, physical activity, smoking status, alcohol use, renal insufficiency, and the use of analgesics, subjects in the lowest gender-specific quintile of magnesium intake (Q1) had, on average, 1 point higher WOMAC knee pain scores than subjects in the highest quintile (Q5): Q1 β (95% CI) 1.00 (0.61–1.39), Q2 0.69 (0.32–1.06), Q3 0.25 (–0.12–0.62), Q4 0.25 (–0.14–0.64); $p < 0.0001$.

Conclusions: In a cohort of adults with prevalent radiographic knee osteoarthritis, magnesium intake overall was below recommended. Low magnesium intake at baseline was associated with increased pain in the affected knee over 48 months of follow up. These findings may be of growing importance as the average dietary magnesium intake for humans is declining.[3]

References:

- [1] Thakur M, Dickenson AH, Baron R. Osteoarthritis pain: nociceptive or neuropathic? *Nat Rev Rheumatol*. 2014;10(6):374–380. doi: 10.1038/nr-rheum.2014.47.
- [2] Fawaz-Estrup F. The osteoarthritis initiative: an overview. *Med Health R I*. 2004;87(6):169–171.
- [3] Rosanoff A, Weaver CM, Rude RK. Suboptimal magnesium status in the United States: are the health consequences underestimated? *Nutr Rev*. 2012;70(3):153–164. doi:10.1111/j.1753-4887.2011.00465.x.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.3024

SAT0485 INCREASED EXPRESSION OF OSTEOPROTEGERIN IN CD271+ MULTIPOTENTIAL STROMAL CELLS FROM FEMORAL HEADS OF PATIENTS WITH HIP OSTEOARTHRITIS

D.C. Ilias¹, S.M. Churchman¹, J. Aderinto², P.V. Giannoudis¹, D. McGonagle¹, E. Jones¹. ¹Leeds Institute of Rheumatic and Musculoskeletal Medicine, University of Leeds; ²Department of Orthopaedics, Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom

Background: Osteoarthritis is a disease of the whole joint, but subchondral bone marrow lesions (BMLs) closely correlate with disease progression [1]. We have previously shown that in OA femoral heads, subchondral bone multipotential stromal cells (MSCs) were 5-fold more abundant in MRI determined BML areas where they also showed reduced mineralisation capacity and altered RANKL expression compared to non-BML areas [2]. This offered novel insight into MSC involvement in the bone remodeling process in OA.

Objectives: The current study investigated a multi-lineage gene expression profile of native CD271+ MSCs from OA femoral heads focusing on osteogenesis and bone remodeling related genes compared to CD271+ MSCs from healthy trabecular bone.

Methods: Femoral heads were obtained from 17 OA patients undergoing total hip arthroplasty. Control samples included healthy iliac crest bone from 12 patients undergoing autograft harvesting for bone reconstruction and healthy femoral neck bone from 2 patients, extracted following core decompression surgery for avascular necrosis of the femoral head. CD271+ MSCs were extracted by enzymatic digestion and purified by FACS, as previously described [3, 4]. MSC cultures were generated by standard methods [4]. Quantitative real-time PCR was performed using TaqMan assays for 12 transcripts and gene expression was normalised to *HPRT1*.

Results: Sorted CD271+ cells from both groups displayed gene expression profiles indicative of their steady-state osteogenic, adipogenic, bone remodeling and stromal-support functions (Table 1). Three out of 11 transcripts showed significant increases in OA: alkaline phosphatase, melanoma cell adhesion molecule and osteoprotegerin (OPG) ($p < 0.05$, Mann Whitney test). The proportion of CD271+ cells in relation to total live cells was more variable but on average 2-fold higher in OA (medians of 2.3 and 5.2%, respectively, not significant). Consistent with previous findings [4, 5], gene expression levels for the majority of transcripts were altered following MSC culture expansion (3 up-regulated and 8 down-regulated).

Table 1. Transcripts expression levels in CD271+ MSCs from OA and healthy bone

Transcript	Median (Range)	Healthy	Fold increase in OA (* $p < 0.05$)
Osterix	0.5 (0.1-16.3)	0.2 (0.1-1.6)	2.4
Alkaline phosphatase	17 (2.4-71.3)	7.1 (0.5-16.3)	2.4*
Collagen 1 α 1	3.1 (0.2-18.7)	1.1 (0.4-8.9)	2.9
Osteonectin	89.8 (6.1-163.1)	15.3 (11.3-81.6)	5.9
Osteopontin	49.2 (9.6-693)	46 (6.9-212.5)	1.1
Cadherin-11	15.6 (1.3-37.9)	5.0 (3.2-29.2)	3.1
Fatty acid-binding protein-4	1.9 (0.3-10.1)	0.8 (0.4-11)	2.5
Receptor activator of nuclear factor kappa-B ligand (RANKL)	0.3 (0.2-2.3)	0.2 (0.1-0.5)	1.1
Osteoprotegerin (OPG)	0.5 (0.1-0.8)	0.1 (0.1-0.4)	3.8*
Stromal cell-derived factor 1	164.6 (22-1377)	128.3 (91.1-1956.8)	1.3
Melanoma cell adhesion molecule	4.5 (1.0-16.3)	0.9 (0.9-3.1)	5.1*

Conclusions: This is the first study to show gene expression alterations in uncultured CD271+ MSCs from OA patients. A notable increase in OPG is suggestive of MSCs' bias towards inhibition of bone resorption in late hip OA and further incriminates the RANKL/OPG pathway, specifically in MSCs, in OA pathophysiology. Further studies are needed to define the role of native MSCs in lesion associated OA disease progression and to evaluate these as a possible target for treatment.

References:

- [1] Goldring et al, *Nat Rev Rheumatol*. 2016;12:632.
- [2] Campbell et al, *Arthritis Rheumatol*. 2016;68:1648-.
- [3] Jones et al., *Arthritis Rheum*. 2010 Jul;62:1944.
- [4] Churchman et al., *Arthritis Rheum*. 2012 Aug;64:2632.
- [5] Churchman et al., *Stem Cells Int*, 2017 (in press).

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.5937

SAT0486 CATASTROPHIZING IN OSTEOARTHRITIS OF THE KNEE: DOES THE LEQUESNE SCORE TAKE IT IN COUNT? A PROSPECTIVE STUDY

J. Lecorney, M. Chouk, X. Guillot, C. Prati, D. Wendling, F. Verhoeven. *Rhumatologie, CHRU de Besançon, Besançon, France*

Background: knee osteoarthritis is a frequent matter of consultation in both general practice and rheumatology. Pain is the main symptom leading to a consultation. This painful experience can be influenced by various factors such as the anxio-depressive state or catastrophizing. Catastrophizing is known to be associated with lower analgesia results in total knee arthroplasty (1).

Objectives: The aim of this study is to evaluate the correlation between the functional status (assessed by the Lequesne score) and the catastrophizing (assessed by the Sullivan score) in patient with osteoarthritis of the knee.

Methods: We included patients consulting for knee osteoarthritis, meeting the OARS criteria (2), one of the three general practitioners participating in the study or a rheumatologist at University Hospital. We excluded those with surgical indication. For each patient we registered the epidemiological data, the radiographic stage as well as the scores of Lequesne and Sullivan questionnaires. The correlation between the different scores were assessed with a Spearman test.

Results: A total of 100 patients were included, 50 consulting a general practitioner and 50 consulting a rheumatologist, between November 2015 and April 2016. Among these 100 patients, there were mainly women (57%) with a mean age of 64.8 ± 1.17 years old. The mean radiographic stage was 2.66 ± 0.11 on the Kellgren and Lawrence scale. The Mean Sullivan score was 12.98 ± 1.18 and the mean Lequesne score was 10.46 ± 0.47 . There was a close correlation ($r = 0.3$, $p = 0.006$) between the Lequesne score and the radiographic scale. There was no correlation between the Sullivan score and the radiographic scale. However, the correlation between the Sullivan and the Lequesne scores was modest ($r = 0.47$; $p < 0.0001$) (Figure 1). Thus, the Lequesne score is correlated with the radiographic scale and the Sullivan score. When we compare the two populations, it appeared that the people consulting a rheumatologist are majority of women (72%) and younger (62.58 ± 1.8 VS 67 , 18 ± 1.38 years, $p < 0.05$) and with a shorter duration of symptoms (6.02 ± 1.12 VS 12.96 ± 1.5 Years, $p < 0.001$). In terms of radiographic and functional impairment, the two populations were similar (Kellgren score of 2.59 ± 0.15 VS 2.7 ± 0.158 and Lequesne score of 11.13 ± 0.67 VS 9.78 ± 0.66 , $p > 0.05$) but there was a clear difference for the Sullivan score (16.96 ± 1.67 VS 9 ± 1.4 ; $p < 0.001$).

Conclusions: Our study is the first to highlight a correlation between the Sullivan and the Lequesne scores in patient consulting for osteoarthritis of the knee. Moreover, unlike the Sullivan, score the Lequesne score is correlated with the radiographic scale. The strength of this study is the inclusion of both patients consulting the general practitioner and those consulting the rheumatologist to avoid a recruitment bias. Indeed, patients consulting the rheumatologist had a catastrophizing score more important for the same functional and radiological impairment than those consulting the general practitioner. Thus, our population is representative of the global population suffering from osteoarthritis of the knee in terms of age, sex-ratio, BMI. The Lequesne score is a global score correlated with structural damage and with psychological factors like catastrophizing.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.2617