FRI0531

DETERMINANTS OF CLINICAL AND RADIOLOGICAL PROGRESSION OF HAND OSTEOARTHRITIS OVER 2 YEARSA. Neuprez¹, A.H. Neuprez¹, E. Maheu², O. Bruyère¹, J.-F. Kaux³, J.-Y. Reginster¹.¹Department of Public Health, UNIVERSITY OF LIÈGE, Liège, Belgium;²Rheumatology, AP-HP, Saint-Antoine Hôpital, Paris, France; ³Rehabilitation and Sports Traumatology Department, University Hospital of Liège, Liège, Belgium

Objectives: The objectives of this prospective observational study were to assess the clinical and radiological changes in hand osteoarthritis (HOA) and to identify the determinants of these changes, over a two year period.

Methods: 203 patients were included in Liège Hand Osteoarthritis Cohort (LIHOC) and followed during 2 years. They met the American College of Rheumatology x-ray/clinical criteria for HOA. At baseline, demographic and clinical characteristics of the population were recorded. Various radiological and clinical parameters were selected to investigate progression.

Results: The general health measures remained stable over time. The number of nodes increased significantly over 2 years while the other clinical parameters did not vary significantly over time (number of painful joints at rest or at pressure and swollen joints). The pinch force decreased over time and the grip strength remained stable. The two tools assessing function (FIHOA and AUSCAN), showed a progressive deterioration over time (statistically significant for FIHOA ($p<0.05$) and borderline ($p=0.17$) significant for the AUSCAN). Almost all patients showed radiologic change during follow-up. Thus, the radiological scores deteriorated significantly over 2 years. An increase in Verbruggen and KL scores was present in 162 (92.04%) and 174 (98.86%) patients, respectively. 39 patients (22.16%) had new erosive joints.

From a clinical perspective, using backward logistic regression, diabetes (OR 2.67%–95% CI 1.13–6.33, $p=0.03$), high degree of radiologic severity (OR 1.23%–95% CI 1.09–1.39, $p<0.01$) and age between 40 and 60 (OR 2.67%–95% CI 1.21–5.90, $p=0.02$) at baseline are predictors of FIHOA worsening over time. The predictors of AUSCAN progression included the pain intensity (OR 0.98%–95% CI 0.97–0.99, $p<0.01$) and the degree of radiologic severity (OR 1.06%–95% CI 1.01–1.12, $p=0.03$) at baseline.

The following factors are associated with radiological deterioration: symptomatic HOA (OR 2.17%–95% CI 1.04–4.51, $p=0.04$) and the number of severely affected joints at baseline (OR 1.11%–95% CI 1.04–1.18, $p<0.01$). In contrast, a high number of erosive or remodelled joints (OR 0.89%–95% CI 0.81–0.98, $p=0.02$) reduce the risk of radiological disease progression.

Conclusions: These results help to better understand the clinical and radiologic progression of HOA, as well as the determinants that have resulted in them.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4866

FRI0532

RELATIONSHIP BETWEEN PATIENT-REPORTED OUTCOMES AND PROPRIOCEPTIVE ACUITY IN PATIENTS WITH TOTAL KNEE ARTHROPLASTYB. Ünver¹, M. Eymir¹, V. Karatosun². ¹School of Physical Therapy and Rehabilitation; ²Department of Orthopaedics and Traumatology, School of Medicine, Dokuz Eylul University, Izmir, Turkey

Background: Total knee arthroplasty (TKA) is offered to patients who have end-stage knee osteoarthritis (OA) to reduce pain and improve functional performance. Pain and functional level in patients with TKA can be measured using self-report questionnaires such as the Numeric Pain Rating Scale (NPRS), Hospital for Special Surgery (HSS), Iowa Level of Assistance Scale (ILAS), and Iowa Ambulation Velocity Scale (IAVS). Proprioception plays an integral role in neuro-motor control of the knee joint and deficits in knee joint proprioception are well documented in individuals with knee osteoarthritis. However, the patient-reported functional level relevance of these deficits is not clear in both individuals with knee OA and with TKA.

Objectives: The aim of this study was to assess relationship between pre-/post-surgery patient-reported outcomes and proprioceptive acuity in patient with TKA due to knee OA.

Methods: The study group consisted of 68 patients (12 males, 56 females), who underwent primary TKR because of knee arthrosis were included in the study with mean age 64.9 ± 9.1 years. Patients were evaluated regarding the knee proprioception (in knee joint angle 15° , 30°), pain (NPRS), HSS knee function score. Functional activities were evaluated using the ILAS and walking speed was evaluated using the IAVS. Patients were evaluated preoperatively and at discharge. All patients underwent the same rehabilitation program.

Results: While there were correlations in different rates in individuals with knee OA between patient-reported outcomes and proprioceptive acuity, there were no

correlations in individuals with TKA between patient-reported outcomes and proprioceptive acuity. Preoperatively, low-to-moderate significant correlations was found between pain and proprioceptive acuity deficit scores in knee joint angle 15° , 30° ($r=-0.196$, $p=0.046$ and $r=-0.378$, $p<0.001$, respectively). There were low significant correlations preoperatively between HSS knee score and proprioceptive acuity deficit scores in knee joint angle 15° , 30° ($r=0.217$, $p=0.027$, and $r=0.275$, $p=0.005$, respectively). There were not significant correlations between proprioceptive acuity deficit scores and all other evaluation tests ($p>0.05$).

Conclusions: There were correlations in different rates in patients with knee OA between patient-reported outcomes and proprioceptive acuity, however there were no correlations in patients with TKA between patient-reported outcomes and proprioceptive acuity. These results suggest that patients who have knee OA and with poor proprioception show more limitation in functional ability and have more pain level. On the other hand, deficits in joint position sense in patients with TKA may be due to factors other than pain and functional disability. Poor proprioception in patients with TKA may be due to surgery related resection of articular cartilage, meniscuses, articular ligaments.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5869

FRI0533

ASIAN MITOCHONDRIAL DNA HAPLOGROUP B IS ASSOCIATED WITH THE DEVELOPMENT OF KNEE OSTEOARTHRITIS IN KOREANB.S. Koo¹, Y. Song², S. Lee², Y.-K. Sung³, K.-J. Shin⁴, N.H. Cho⁵, J.-B. Jun³.¹Department of Internal Medicine, Inje University Seoul Paik Hospital, Inje University College of Medicine; ²Department of Radiology; ³Department of Rheumatology, Hanyang University Hospital for Rheumatic Diseases; ⁴Department of Forensic Medicine, Yonsei University College of Medicine, Seoul; ⁵Department of Preventive Medicine, Ajou University School of medicine, Suwon, Korea, Republic Of

Background: In our previous study, we have conducted a case-control study to demonstrate the mitochondrial DNA (mtDNA) haplogroups in the development of knee osteoarthritis (OA). However, there were no mtDNA haplogroups associated with the development of knee OA.

Objectives: The objective of this study was to elucidate the role of mtDNA haplogroups in the development of knee OA in prospective on-going community-based cohort.

Methods: This cohort was established in 2001 to investigate the epidemiologic characteristics of major chronic diseases in Korea by the Korean Genome and Epidemiology Study, Centre for Disease Control (KCDC). The epidemiologic data and knee radiographs were obtained from the second follow-up (2005–2006) and the sixth follow-up (2013–2014), and DNA was distributed from the fourth follow-up (2009–2010). The Kellgren-Lawrence (K/L) score was measured using a knee X-ray taken at each visit. The mtDNA was analysed by multiplex mutagenetically separated polymerase chain reaction to determine the mtDNA haplogroups (M, G, D, D4, D5, M7, M8, M9, M10, N, A, N9, R, F, B). The frequency of the mtDNA haplogroup was compared between the group with knee OA (K/L ≥ 2 or underwent total knee replacement arthroplasty) and the group without knee OA (K/L <2) at the 6th follow-up in the cohort of K/L=0 at the second follow-up. Multiple logistic regression was used to determine relative risk (RR) of mtDNA haplogroups for OA by adjusting sex, age, and body mass index (BMI).

Results: A total of 1115 epidemiological data, knee radiographs, and DNA samples were distributed. Of these, 572 were cohorts with K/L=0 in the second follow-up, and 438 underwent knee X-ray examination at the sixth follow-up visit. Among them, 160 were classified as Knee OA by K/L grading and 278 were classified as control group. The mean age (59.4 ± 8.5 and 64.3 ± 6.8), the number of male patients (61 [21.9%] and 11 [6.9%]), and the mean BMI (24.0 ± 3.1 and 25.0 ± 3.0) were significantly different between normal and OA group ($p<0.001$). In comparison of frequency of mtDNA haplogroup between two groups, haplogroup B was significantly higher in OA group (unadjusted RR=1.794, $p=0.030$ and adjusted RR=2.346, $p=0.005$).

Conclusions: Our data suggested that mtDNA haplogroup B contributed to the development of knee OA in Korean. Further study is ongoing to confirm the relationship between the progression of knee OA and mtDNA haplogroups.

Acknowledgements: Our previous study was presented at 4th International Congress on Controversies in Rheumatology and Autoimmunity, Bologna, Italy, 9–11 March 2017.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2999

FRI0534

RADIOGRAPHIC OUTCOMES WERE ASSOCIATED WITH PAIN AND FUNCTION RESPONSES: POST-HOC ANALYSIS FROM A PHASE 2 STUDY OF A WNT PATHWAY INHIBITOR, SM04690, FOR KNEE OSTEOARTHRITIS TREATMENT

C. Swearingen¹, J. Tambiah¹, A. Gibofsky², N. Lane³, T. McAlindon⁴, M. Hochberg⁵. ¹Samumed, LLC, San Diego; ²Hospital for Special Surgery, New York; ³UC Davis Medical Center, Davis; ⁴Tufts Medical Center, Boston; ⁵University of Maryland School of Medicine, Baltimore, USA

Background: SM04690, a small molecule intra-articular (IA) Wnt pathway inhibitor is in development as a potential disease modifying knee osteoarthritis drug. A phase 2, 52 week, randomised controlled trial evaluated changes in Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) Pain and Function and medial joint space width (mJSW). It was hypothesised that observed mJSW increases led to WOMAC subscore responder improvements. To address this question, a concordance analysis was performed.

Objectives: To evaluate concordance, or level of agreement, between mJSW and WOMAC Pain and Function 'responders.'

Methods: Subjects with ACR-defined knee OA, Kellgren-Lawrence (KL) grades 2–3, received 2 mL IA SM04690 (0.03, 0.07, or 0.23 mg) or placebo (PBO) in the target (most painful) knee. WOMAC Pain [0–50] and Function [0–170] were assessed at Weeks 0, 4, 13, 26, 39 and 52 and knee radiographs at Weeks 0, 26 and 52. Baseline-adjusted logistic regression group analyses estimated concordance between mJSW change and pain and function changes for responders who achieved both WOMAC Pain and Function improvements of >50% and >20 [scaled to 100] points. Receiver-operator characteristic (ROC) curves were generated with area under curve (AUC) to estimate concordance (AUC >0.7='acceptable' and >0.8='excellent' concordance¹). ITT and two subgroups were analysed: 1) unilateral symptomatic knee OA (pre-specified: UNI) and 2) unilateral symptomatic knee OA without widespread pain or comorbid symptoms (Widespread Pain Index≤4 and Symptom Severity≤2, post-hoc: UNI-WP).

Results: 455 subjects were enrolled (mean age 60.3 [±8.7] years, BMI 29.9 [±4.6] kg/m², 268 [58.9%] female, 292 [64.2%] KL Grade 3, 164 [36.0%] UNI knee OA).

In the ITT, approximately 53% were responders across all groups. In UNI, 20 (56%) 0.03 mg; 20 (63%) 0.07 mg; 23 (64%) 0.23 mg and 15 (47%) PBO, and in UNI-WP, 15 (56%) 0.03 mg; 16 (62%) 0.07 mg; 19 (70%) 0.23 mg and 12 (44%) PBO were responders. The 0.03 mg (UNI, NS; UNI-WP, p=0.047) and 0.07 mg (UNI, p=0.009; UNI-WP, p=0.013) doses also demonstrated increased mJSW compared to PBO at Week 52.

In ITT, no treatment group achieved AUC >0.7 (figure 1). In UNI, the 0.07 mg dose demonstrated 'acceptable' concordance between response and mJSW (AUC=0.783). In UNI-WP, the 0.07 mg dose showed 'excellent' concordance (AUC=0.825).

Abstract FRI0534 – Figure 1. ROC Curves Illustrating Concordance between WOMAC Pain and Function Response and mJSW Change by Treatment Group and Analysis Group

Conclusions: In this post-hoc analysis, treatment with SM04690 maintained or increased mJSW in the 0.03 and 0.07 mg doses compared to PBO over 52 weeks. In UNI and UNI-WP 0.07 mg cohorts, changes in mJSW were concordant with WOMAC Pain and Function response.

REFERENCE:

- [1] Hosmer DW, Lemeshow S. Applied Logistic Regression 2000. New York: John-Wiley & Sons, Inc.

Disclosure of Interest: C. Swearingen Shareholder of: Samumed, LLC, Employee of: Samumed, LLC, J. Tambiah Shareholder of: Samumed, LLC, Employee of: Samumed, LLC, A. Gibofsky Shareholder of: AbbVie, Amgen, Johnson and Johnson, GSK, Regeneron, Consultant for: AbbVie, Pfizer, Horizon, Iroko, Celgene, Novartis/Sandoz, Samumed, LLC, Speakers bureau: AbbVie, Celgene, Pfizer, N. Lane Consultant for: Samumed, LLC, T. McAlindon Grant/research support from: Samumed, LLC, Consultant for: Samumed, LLC, Astellas, Flexion, Pfizer, Regeneron, Seikugaku, M. Hochberg Consultant for: Bioberica, EMD Serono, Novartis Pharma AG, Plexxikon, Pfizer, Proximagen, Regeneron, Samumed, LLC, Theralogix LLC

DOI: 10.1136/annrheumdis-2018-eular.6036

FRI0535

THE CLINICAL AND RADIOGRAPHIC EARLY COURSE OF KNEE AND HIP OSTEOARTHRITIS OVER 10 YEARS IN CHECK (COHORT HIP AND COHORT KNEE)

D. Schiphof¹, J. Runhaar¹, J. Waarsing², W. van Spil³, M. van Middelkoop¹, S. Bierma-Zeinstra⁴. ¹Department of General Practice; ²Department of Orthopaedics, ERASMUS MC, Rotterdam; ³Department of Rheumatology and Clinical Immunology, UMC Utrecht, Utrecht; ⁴Department of General Practice and Department of Orthopaedics, ERASMUS MC, Rotterdam, Netherlands

Background: Osteoarthritis (OA) is the most prevalent joint disease and one of the leading causes of chronic pain and disability worldwide. Yet, relatively little is known about the early course of OA.

Objectives: To describe the clinical and radiological early course of hip and/or knee OA.

Methods: CHECK (Cohort Hip and Cohort Knee) is a multicenter, prospective observational cohort study of 1002 participants. Inclusion criteria were: 1) age 45–65 years at the time of inclusion, 2) pain in knee(s) and/or hip(s), 3) never or not longer than 6 months ago for the first time consulted a physician for these symptoms. Participants were included through general practitioners and advertisements. Visits took place at baseline, and at 2, 5, 8, and 10 year follow-up (T0, T2, T5, T8 and T10). At each visit, questionnaires, including joint pain presence (Numeric rating score, NRS), morning stiffness, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), were inquired, and physical examination, and x-ray imaging were performed. Clinical OA was defined by the clinical American College of Rheumatism (ACR) criteria. Radiographic OA (ROA) was defined as Kellgren and Lawrence score (K and L) of ≥2.

Results: 1002 participants (age 56±5 years (mean ±sd); 79% female; BMI 26±4 kg/m²) were included. 83% reported knee pain at baseline, 59% reported hip pain, and 42% reported both. 10 year follow-up data were complete for 85% of the participants. The total WOMAC score showed a median of 21 (range 0–80) at baseline and remained rather constant over time (T2=20 (0–83); T5=20 (0–86); T8=19 (0–88); T10=19 (0–81)). The same was observed for pain (NRS). At baseline, 520 participants fulfilled the clinical ACR criteria for knee and/or hip OA. Of these, only 91 (17.5%) participants subsequently fulfilled the ACR criteria at every follow-up visit. 138 participants did not fulfil the clinical ACR criteria for hip or knee OA. At baseline, 157 participants showed ROA in on or both knees and 161 participants showed ROA in on or both hips. After 10 years follow-up, 601 (60%) participants had ROA in one or both knees and 513 (51%) participants had hip ROA in one or both hips. Of those with hip OA in at least one hip, 256 (50%) had bilateral knee ROA at T10. Of the participants with knee OA in at least one knee, 256 (43%) had bilateral hip ROA at T10. Most joint replacements took place between 2 and 8 years follow-up (11 knees, 29 hips), predominantly in participants with multiple affected joints. Only 115 (13.5%) participants did not develop ROA of knee or hip.

Conclusions: Although mean pain scores remain fairly stable over time, individual scores tend to fluctuate over time. Therefore, only few participants constantly fulfil the clinical criteria for OA. More than half of the participants had ROA after 10 year follow-up and a large overlap of knee and hip ROA was observed. Numbers of joint replacements were highest in participants developing both hip and knee OA.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5215

FRI0536

PREGABALIN EFFICACY IN TREATMENT OF CHRONIC PAIN IN PATIENTS WITH KNEE OSTEOARTHRITIS

E. Filatova, E. Turovskaya, L. Alekseeva, V.A. Nasonova Research Institute of Rheumatology, Moscow, Russia, Moscow, Russian Federation

Background: Modern methods of treatment of osteoarthritis have mainly anti-inflammatory action. A few studies show the effectiveness of centrally acting drugs for chronic pain in osteoarthritis (OA) of the knee.

Objectives: To study the efficacy of Pregabalin in treatment of chronic pain in patients with knee OA.