isokinetic muscle strength assessment, hand grip strength and gait speed had predictive values for sarcopenia.

Abstract SAT0577 – Table 1. Baseline features of the patients of knee Osteoarthritis and healthy controls

	Group 1	Group 2	Group 3	p
Age	67.08±2.02 (64-69) ^{a,c}	60.31±4.71 (50-70)	59.76±5.16 (52-69)	<0.001*
Body mass index	23.24±3.34 (18.4-29.3) ^{a,c}	32.82±5.44 (20.8-61.6)	29.22±3.20 (22.6-35.9)	<0.001
Mid-Upper Arm Circumference	22.17±4.00 (18-32) ^{a,c}	33.37±5.04 (21-57)	32.18±4.33 (26-43)	<0.001
Calf circumference	31.92±2.68 (25-35) ^{a,c}	40.52±6.30 (32-63)	40.85±6.46 (32-57)	<0.001
Gait speed	0.93±0.1 (0.82-1.12) ^{a,c}	0.61±0.18 (0.36-1.5)	0.6±0.14 (0.36-0.9)	<0.001
Hand grip strength (right)	13.58±2.94 (7-17) ^{a,c}	20.69±5.38 (8-38)	21.94±5.72 (12-38)	<0.001

mean±standard deviation

a A statistically significant difference was found between the post-hoc bilateral comparative "sarcopenic" group (p < 0.017)

b A statistically significant difference was found between the post-hoc bilateral comparative "non sarcopenic" group (p < 0.017)

c A statistically significant difference was found between the post-hoc bilateral comparative "healthy control" group (p < 0.017)

Conclusions: We found that patients with sarcopenic OA were older, weaker, less powerful, undernourished, and restricted in their level of physical activity in the study in which we identified sarcopenia as approximately 12% in patients with osteoarthritis. Among the methods of determining sarcopenia, ultrasound becomes prominent with its practical, cheap and easily accessible features. We think that our results will increase the awareness of the presence of sarcopenia in OA patients.

REFERENCES:

- [1] Kemmler W, Teschler M, Goisser S, Bebenek M, von Stengel S, Bollheimer LC, et al. Prevalence of sarcopenia in Germany and the corresponding effect of osteoarthritis in females 70 years and older living in the community: results of the FORMOSA study. *Clinical interventions in aging* 2015;10:1565.
- [2] Papalia R, Zampogna B, Torre G, Lanotte A, Vasta S, Albo E, et al. Sarcopenia and its relationship with osteoarthritis: risk factor or direct consequence? *Musculoskeletal surgery* 2014;98:9–14.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7043

SAT0578

PATELLAR TENDON ENTHESIS ABNORMALITIES AND THEIR ASSOCIATION WITH KNEE PAIN AND STRUCTURAL ABNORMALITIES IN OLDER ADULTS

S.M. Mattap¹, D. Aitken¹, K. Willis¹, A. Halliday², C. Ding¹, W. Han¹, F. Cicuttini³, G. Jones¹, L. Laslett¹. ¹Menzies Research Institute for Medical Research, University of Tasmania; ²Department Of Medical Imaging, Royal Hobart Hospital, Hobart; ³Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, Australia

Background: The patellar tendon works together with the quadriceps tendon to enable knee flexion and straightening. Its attachment site (enthesis) is at risk of micro damage and degeneration. Recent studies suggest that enthesis abnormalities are associated with development of osteoarthritis.^{1, 2} However, no studies have assessed the presence of patellar enthesis abnormalities in older adults and its association with osteoarthritis outcomes.

Objectives: To describe the associations of patellar tendon enthesis (PTE) abnormalities visible on magnetic resonance (MR) images; and knee pain, physical function limitations, osteoarthritic structural abnormalities cross-sectionally and longitudinally over 10.7 years.

Methods: PTE abnormalities were defined as presence of abnormal bone signal and/or bone erosion. They were measured on T2-weighted fat suppressed fast spin echo MR images at baseline in 961 community-dwelling older adults and followed for 10.7 years. Knee pain and physical function limitation score were assessed using WOMAC. Bone marrow lesions (BMLs), cartilage volume and defects, tibial bone area, and infrapatellar fat pad (IPFP) area were assessed using validated methods. Associations were assessed using hurdle, log binomial, linear, and mixed models, after adjusting for confounders.

Results: 20% of participants had bone signal and/or erosion at PTE. Cross-sectionally, presence of PTE abnormalities were associated with greater intensity of pain while going up and down stairs ($\beta=0.22$ (95% CI; 0.03, 0.41)), greater risk of having a femoral BML (RR=1.46 (1.22, 1.90)), greater lateral tibial bone area ($\beta=25.95$ (1.00, 50.91)), smaller IPFP area ($\beta=-0.26$ (-0.46, -0.05)), and a worse tibial cartilage defects cross sectionally (RR=1.70 (1.16, 2.47)), after adjustment of demographic and structural confounders. Longitudinally, PTE abnormalities at baseline predicted an increased risk of deleterious changes in tibial BML size (RR=1.52 (1.12, 2.05)) but not clinical symptoms, and other structural changes over 10.7 years.

Conclusions: Patellar tendon enthesis abnormalities are common in the elderly. The presence of cross-sectional but not longitudinal associations suggests they commonly co-exist with other knee structural abnormalities, but that they are not be a major player in symptom development or structural changes, excepting tibial BMLs.

REFERENCES:

- [1] Binks DA, Bergin D, Freemont AJ, Hodgson RJ, Yonenaga T, McGonagle D, et al. Potential role of the posterior cruciate ligament synovio-entheseal complex in joint effusion in early osteoarthritis: a magnetic resonance imaging and histological evaluation of cadaveric tissue and data from the Osteoarthritis Initiative. *Osteoarthritis Cartilage*. 2014;22(9):1310–7.
- [2] Benjamin M, McGonagle D. Histopathologic changes at "synovio-entheseal complexes" suggesting a novel mechanism for synovitis in osteoarthritis and spondylarthritis. *Arthritis Rheum* 2007;56(11):3601–9.

Acknowledgements: National Health and Medical Research Council of Australia; Tasmanian Community Fund; Masonic Centenary Medical Research Foundation.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4987

SAT0579

PRESENCE OF AUTOANTIBODIES IN EROSIVE HAND OSTEOARTHRITIS AND ASSOCIATION WITH CLINICAL PRESENTATION

M.A. van Delft¹, S. Van Beest¹, M. Kloppenburg^{1,2}, L.A. Trouw^{1,3}, A. Ioan-Facsinay¹. ¹Rheumatology; ²Clinical Epidemiology; ³Immunohematology and Bloodtransfusion, Leiden University Medical Center, Leiden, Netherlands

Background: One of the most prevalent clinical phenotype of osteoarthritis (OA) is hand OA (HOA), which in some patients can evolve to erosive HOA. In erosive HOA central erosions and subchondral destruction are seen, and imaging studies have indicated that in erosive HOA hand joints display more inflammatory signs than in non-erosive HOA.

Autoantibodies directed against post-translationally modified proteins, such as citrullinated (ACPA) and carbamylated (anti-CarP antibodies) proteins, are a hallmark of rheumatoid arthritis (RA), and are associated with more severe joint damage and inflammation. Interestingly, these antibodies are present in a small subset of SLE patients as well, in which they associate with bone erosions. This suggests the possible involvement of autoantibodies in inflammation and joint damage in other conditions than RA. Therefore, we hypothesised that autoantibodies are present in HOA and associate with erosive disease.

Objectives: To investigate whether three RA-associated antibodies, Rheumatoid Factor (RF), ACPA and anti-CarP antibodies, are present in hand OA and associate with erosive OA.

Methods: Anti-CarP IgG, ACPA IgG and RF IgM were measured by ELISA in baseline sera of HOA patients from 3 cohorts: HOSTAS (n=510, mean age 61.0 years, 85.7% women, 27.2% EOA), ECHO (n=47, mean age 63.4 years, 89.4% women) and EHOA (n=23, mean age 57.1 years, 73.9% women), and in sera of healthy controls (HC; n=196, mean age 44.1 years, 51.0% women). The prevalence of autoantibodies was compared between HOA and HC and between erosive and non-erosive HOA. In HOSTAS, hand radiographs were scored (Kellgren-Lawrence, OARS osteophyte and joint space narrowing scores) and C-reactive protein (CRP) levels, representing inflammation, were assessed. Groups were compared using non-parametric tests.

Results: In both ECHO and EHOA cohorts, only one patient was positive for RF IgM and none were positive for ACPA IgG. In all three cohorts, a low prevalence of anti-CarP IgG was detected and this was not different between HOA patients and HC (6.6% vs 3.6%, p=0.12). Moreover, in HOSTAS, the prevalence of all tested autoantibodies was low and not significantly different from HC (anti-CarP 7.1% vs 3.6%, p=0.08; ACPA 0.8% vs 1.5%, p=0.37; RF 6.1% vs 4.1%, p=0.30). Likewise, no difference was found between erosive and non-erosive HOA (anti-CarP 7.2% vs 7.1%, p=0.94; ACPA 0.7% vs 0.8%, p=0.92; RF 4.3% vs 6.5%, p=0.36). Radiographic damage and CRP levels were similar in anti-CarP positive vs negative, and RF positive vs negative HOSTAS patients.

Conclusions: The prevalence of autoantibodies is similar in HOA patients and healthy controls. Moreover, these autoantibodies are not associated with erosive disease, structural damage or inflammation in HOA patients, indicating that another mechanism is driving erosive disease.

Acknowledgements: We thank J.C. Kwekkeboom for her help in collecting the samples, C. Kromme for his help with designing the data file and W. Damman for her help in the scoring of the radiographs.

Disclosure of Interest: M. van Delft: None declared, S. Van Beest: None declared, M. Kloppenborg: None declared, L. Trouw Consultant for: Listed as inventor in a patent application regarding the detection of anti-CarP antibodies for rheumatoid arthritis, A. Ioan-Facsinay: None declared

DOI: 10.1136/annrheumdis-2018-eular.2584

SAT0580

ASSOCIATION OF CHILDHOOD AND ADULTHOOD ADIPOSITY MEASURES WITH KNEE CARTILAGE THICKNESS, CARTILAGE VOLUME AND BONE AREA IN YOUNG ADULTS

T. Meng¹, A. Venn¹, F. Eckstein^{2,3}, W. Wirth^{2,3}, F. Cicuttini⁴, L. March⁵, T. Dwyer^{1,6}, M. Cross⁵, L.L. Laslett¹, G. Jones¹, C. Ding^{1,4,7}, B. Antony¹. ¹Menzies Institute for Medical Research, Hobart, Australia; ²Institute of Anatomy, Paracelsus Medical University Salzburg and Nuremberg, Salzburg, Austria; ³Chondrometrics GmbH, Ainning, Germany; ⁴Department of Epidemiology and Preventive Medicine, Monash University, Melbourne; ⁵Institute of Bone and Joint Research, University of Sydney, Sydney, Australia; ⁶The George Institute for Global Health, Nuffield Department of Obstetrics and Gynaecology, University of Oxford, Oxford, UK; ⁷Clinical Research Centre, Zhujiang Hospital, Southern Medical University, Guangzhou, China

Background: Adiposity is associated with increased risk of knee osteoarthritis (OA); cartilage thickness, cartilage volume and subchondral bone area are established biomarkers in knee OA. However, there are no studies describing the effects of adiposity during early life on knee cartilage and bone morphology in adulthood.

Objectives: To describe the longitudinal associations between adiposity measures in childhood and adulthood and knee cartilage thickness, cartilage volume and subchondral bone area in young adults.

Methods: 186 participants from the Australian Schools Health and Fitness Survey of 1985 (aged 7–15 years) were followed up 25 years later (aged 31–40 years). Childhood measures (weight, height, waist circumference and hip circumference) were collected in 1985, and corresponding adulthood measures were collected during 2004–2006. Body mass index (BMI) and waist-hip ratio (WHR) were calculated. Participants underwent knee magnetic resonance imaging (MRI) during 2008–2010, and cartilage thickness, cartilage volume and subchondral bone area were measured using a quantitative approach (Chondrometrics 3.0, Germany). Multivariable linear regressions were used to examine the above associations.

Results: Among 186 participants (48.4% females), 7.6% were overweight in childhood, and 42.1% in adulthood. There were no significant associations between childhood adiposity measures and adulthood knee cartilage and bone morphological measures; the same applied to adulthood BMI and overweight. However, adulthood WHR was negatively associated with cartilage thickness in the patella (β -0.009 mm/0.01 unit, 95% confidence interval (CI) -0.019 to 0.001, $p=0.065$), the medial femorotibial compartment (MFTC) (-0.011 , -0.022 to 0.000 , $p=0.048$) and the lateral femorotibial compartment (LFTC) (-0.013 , -0.025 to -0.002 , $p=0.027$), with cartilage volume in the patella (β -21.85 mm³/0.01 unit, 95% CI -37.77 to -5.93, $p=0.007$), the MFTC (-14.17 , -29.53 to 1.19 , $p=0.070$) and the LFTC (-23.87 , -42.18 to -5.57 , $p=0.011$), and with subchondral bone area in the patella (β -4.69 mm²/0.01 unit, 95% CI -8.26 to -1.12, $p=0.010$) and the LFTC (-4.76 , -9.47 to -0.06 , $p=0.047$), but not the MFTC.

Abstract SAT0580 – Figure 1. Scatter plots and linear regression lines for associations between adulthood WHR and knee cartilage thickness (A: patella; B: MFTC; C: LFTC).

Linear regression lines are from models adjusted for adulthood age, duration of follow-up, gender and adulthood knee injury. WHR, waist-hip ratio; MFTC, medial femorotibial compartment; LFTC, lateral femorotibial compartment.

Conclusions: Childhood adiposity measures did not predict adulthood knee cartilage and bone morphological measures. However, adulthood WHR, but not BMI or overweight status, was negatively associated with cartilage thickness, cartilage volume and subchondral bone area, suggesting central obesity may affect knee structures in young adults.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2649

SAT0581

PREDICTIVE FACTORS OF RESPONSE TO A SINGLE INJECTION OF MANNITOL-MODIFIED CROSS-LINKED HYALURONIC ACID (HANOX-M-XL) IN PATIENTS WITH TRAPEZIOMETACARPAL OSTEOARTHRITIS. RESULTS OF A MULTICENTRE PROSPECTIVE OPEN-LABEL PILOT STUDY (INSTINCT TRIAL)

J. Dauvissat¹, T. Conrozier¹, H. Lellouche², B. Maillet³, C. Rizzo⁴, V. Travers⁵, V. Locquet⁶, S. Mellac-Ducamp⁷. ¹Rheumatology, Nord Franche Comté Hospital, Trevenans; ²Rheumatology, Institut Nolle, Paris; ³Rheumatology, Clinique St Odilon, Moulins; ⁴Orthoedics, Clinique du Parc; ⁵Orthoedics, Clinique St Charles, Lyon; ⁶Orthoedics, Inst. Chirurgical de la Main et du Membre Supérieur, Villeurbanne; ⁷Rheumatology, Centre hospitalier, Nevers, France

Background: Viscosupplementation is likely effective to alleviate pain and improve function in patients suffering from rhizarthrosis. However no study has been focused on the predictors of efficacy of the treatment.

Objectives: To search predictive factors of success or failure 3 months after a single intra-articular injection of a mannitol-modified hyaluronic acid (HA) viscosupplement, in patients suffering from trapeziometacarpal (TMC) osteoarthritis (OA).

Methods: Patients with symptomatic TMC OA were included in a 3 month prospective multicentre open-label trial. To be included in the study patients must have symptomatic TMC OA, not adequately relieved by analgesics/NSAIDs therapy and/or by the use of a thumb splint. Before treatment all patients must have had plain radiographs with the Kapandji incidences, for the Dell radiological grade assessment. (1 to 4). Primary endpoints were the variation between injection (D0) and day 90 (D90) of the thumb pain measured on 11 point-Likert scale (0 to 10) and the patient's self-assessment of efficacy (0 to 3). Treatment consisted in a single injection of 0.6 to 1 ml of HANOX-M-XL, a viscosupplement made of a cross-linked HA of high molecular weight, from biofermentative origin, combined with mannitol. All injections were performed under fluoroscopic or ultrasound guidance. Predictive factors of pain decrease were studied in univariate and multivariate analysis. All statistical tests were carried out two tailed at the 5% level of significance.

Results: 122 patients (76% females, mean age 60, mean disease duration 36 months) were included and 120 (98%) were assessed at 3 months. 23% of the TMC OA were grade 1 according to Dell classification, 36.8% grade 2, 36.8% grade 3 and 3.5% grade 4. At D0, the average (SD) pain level was 6.5 ± 1.6 without significant difference between Dell groups ($p=0.21$). At day 90, pain decreased from 6.5 ± 1.6 to 3.9 ± 2.5 (Difference -2.7 ± 2.5 ; -42% ; $p<0.0001$) without significant difference depending on the Dell grade ($p=0.055$), despite a seemingly smaller number of responders in stage 2 patients. The average analgesic consumption decreased in more than one out of two patients. In univariate analysis, the clinical response was significantly worse in patients taking NSAIDs at baseline ($p=0.012$), but this difference no longer reached the significance threshold in the multivariate analysis. In multivariate analysis no predictor of response was identified. There was no safety issue. All AEs (11%) were transient increase of pain during or following HA administration and resolved without sequel within 1 to 7 days.

Conclusions: This study, of the largest cohort of patients treated with viscosupplementation in TMC OA, suggests that a single course of HANOX-M-XL injection is effective in relieving pain, without safety concern. Interestingly patients with the more advanced stages of OA seemed to benefit the treatment as well as those with less advanced OA.

Disclosure of Interest: J. DAUVISSAT: None declared, T. Conrozier Consultant for: Labrha SAS, Speakers bureau: Labrha SAS, H. Lellouche: None declared, B. MAILLET: None declared, C. Rizzo: None declared, V. Travers: None declared, V. Locquet: None declared, S. Mellac-Ducamp: None declared

DOI: 10.1136/annrheumdis-2018-eular.3317