

Conclusions: The intra-articular injections of autologous PRP showed a reduction of pain, symptoms and a recover articular function in patients affected by severe chondropaties of the knee. The patients ≤ 45 years old, males, and without osteoarthritis showed a faster clinical improvement.

283 PATIENT RELEVANT OUTCOME 7 YEARS AFTER TOTAL HIP REPLACEMENT FOR OA – A PROSPECTIVE STUDY

A.K. Nilsdotter¹, S.L. Lohmander². ¹Department of Orthopedics, Halmstad, SWEDEN, ²Department of Orthopedics, Clinical Sciences Lund, Lund University, SWEDEN

Purpose: To investigate prospectively the patient-relevant outcome 7 years after total hip replacement (THR) for osteoarthritis (OA).

Methods: 219 consecutive patients (120 women) with primary OA, mean age 71 (range 50–92) were assigned for THR at the Department of Orthopedics at Halmstad Central Hospital, Sweden. They were examined preoperatively, at 3, 6, 12 months, and at 4, 5 and 7 years postoperatively with the self-administered questionnaires SF-36 and WOMAC. Supplementary questions regarding postoperative complications, general co-morbidity, social circumstances and patient satisfaction were asked at the three last follow-ups. A matched reference group, 117 subjects (67 women), mean age 72 (range 52–92) without hip complaints were recruited from the community and investigated at the same times.

Results: 151/170 (89%) of the patients and 65/74 (88%) of the reference group participated at the 7 year follow-up. The best postoperative result was reported one year postoperatively. At that time the only difference between the two groups was seen in SF-36 physical function (PF), where the patients scored worse than the reference group (54 vs. 69). At the later follow-ups there was a successive decline in SF-36 PF compared to the reference group. However, patients did not report worse WOMAC function than the reference group. There was no difference in frequency of co-morbid conditions (19% vs. 31% $p < 0.08$) between those operated and the reference group, but those operated were in greater need of walking aid (46% vs. 8% $p < 0.0001$) and reported more regional pain and widespread pain (68% vs. 53% $p < 0.05$). However, 97% of the patients were satisfied with pain relief and 96% with improved physical function at the 7 year follow-up.

Conclusions: Total hip replacement for osteoarthritis is a successful procedure. This study shows that in an unselected cohort the patients experience the same health-related quality of life as a matched reference group 7 years after THR except for physical function where the patients score worse. This may be explained by musculoskeletal co-morbidities such as progress in generalized OA. The difference in outcome between SF-36 PF and WOMAC function may be explained by the disparity between a generic and a disease and extremity specific measurement where SF-36 PF represents the entire physical function.

284 AN ORAL RECOMBINANT FORM OF SALMON CALCITONIN SUPPRESSES BOTH BONE RESORPTION AND CARTILAGE DEGRADATION

I. Byrjalsen, K. Henriksen, B.J. Riis, M.A. Karsdal, C. Christiansen. *Nordic Bioscience, Herlev, DENMARK*

Purpose: Calcitonin suppresses bone resorption, and appears to have an effect on cartilage degradation, and therefore has been speculated to be useful for treatment of osteoarthritis. However, the pharmacodynamic profile of sCT on cartilage degradation is not clear. The aim of the study was to assess the effect of bi-daily dosing with 0.8 mg of oral salmon calcitonin (sCT) given in the morning at 08:00 and pre-dinner at 17:00 with respect to reduction of both bone resorption (CTX-I) and cartilage degradation (CTX-II).

Methods: Participants were from a randomized, double-blind, placebo-controlled 14-day treatment study including postmenopausal women and men ($n = 73$) suffering from osteoarthritis (OA). One of the treatment arms comprised administration of 0.8 mg of oral sCT given twice daily with one dose given in the morning to fasting individuals at 08:00, and one dose given pre-dinner at 17:00 ($n = 26$). On treatment day 1 and day 14, blood samples were taken before drug intake, and at 10, 15, 30, 45 minutes, and 1, 2, and 4 hours for plasma sCT measurements. Urine samples were collected at baseline, at 2, 4, 6, 8, 11 and 13 hours. The absorption of calcitonin was assessed by measurement of plasma sCT concentrations, and bone resorption by the biochemical marker of urine CTX-I (C-terminal telopeptide of collagen type I). Cartilage degradation was assessed by urine CTX-II (C-terminal telopeptide of collagen type II).

Results: Dosing with oral sCT resulted in a significant increase in plasma sCT levels, which was eliminated within two hours after dosing. In alignment, urine CTX-I was suppressed over placebo with an AUC_{0-8hrs} of -425 [% \times Hrs] at the 8:00 dose compared to -105 [%Hrs] in the placebo group ($p = 0.003$). The suppression of CTX-I was present throughout the 13 hours sampling period. For CTX-II a suppression of the AUC_{0-8hrs} of -355 [%Hrs] was observed compared to -60 [%Hrs] in the placebo group ($p < 0.007$). The suppression of CTX-II was not alleviated within the 13 hour observation period. The results from the day 14 analysis were all in the same magnitude.

Conclusions: We found that an oral recombinant form of salmon calcitonin significantly suppressed both bone resorption and cartilage degradation within a short time span. These studies warrant further investigation of the potential use of oral calcitonin for treatment of osteoarthritis.

285 CLINICAL, RADIOLOGICAL AND IMMUNOGENETIC ASPECTS OF EROSIVE OSTEOARTHRITIS (EOA) OF THE HAND IN A GROUP OF PATIENTS FOLLOWED FOR 2 YEARS FROM A SINGLE CENTER

M. Frigato¹, R. Ramonda¹, C. Campana¹, C. Contessa¹, P. Frallonardo¹, V. Barbieri², A. Piccoli³, P. Zanovello², V. Bronte², L. Punzi¹. ¹Rheumatology Unit, University of Padova, Padova, ITALY, ²Oncology Department, University of Padova, Padova, ITALY, ³Nephrology Unit, University of Padova, Padova, ITALY

Purpose: EOA is believed to be a clinical subset of OA most often involving the hands of middle-aged women and characterised by a frequent aggressive clinical course. In EOA, pain and inflammation persist or recur for many years, in contrast with the more common nodal OA (non-EOA), in which they are usually found only at the disease onset. Despite its severity, EOA is still poorly defined, so it is debated whether or not it belongs to OA or is a separate entity. Since very few reports are available concerning the various features of EOA, the aim of our study was to analyse its clinical, radiological and immunogenetic aspects in a cohort of 109 patients observed in our unit, and compare these with a series of non-EOA patients

Methods: A total of 162 patients, 109 with EOA and 53 with non-EOA were analysed. All patients satisfied the Altman criteria for OA of the hand. Patients showing at least two erosions in interphalangeal (IP) joints were included in EOA, while patients with erosions in metacarpophalangeal joints were excluded. In all patients (EOA and non-EOA) we evaluated the number of active joints (AJ) (swollen and painful), number of joints involved (NJI) and the radiographic score (RS) by Kallman scale. In 24 patients with EOA followed for at least two years, we evaluated the outcome for clinical and radiological aspects. Patients underwent hand X-rays at the baseline and after a two year period and assessment was done by two experienced operators. The clinical examination was also performed at the first visit and after two years. In all patients HLA typing was determined on blood samples (GenoPrep™ DNA from Blood Kit by GenoVision A.S, Norway; PCR Master Mixes).

Results: No difference was observed between EOA and non-EOA for age and disease duration. The mean number of erosions in EOA was 4.01 (± 2.4). Both the number of AJ and the RS were higher in EOA (6.3 ± 2.4 and 65.9 ± 26.5 , respectively) than in non-EOA (4.5 ± 4.6 , $p = 0.02$ and 32.1 ± 19.1 , $p < 0.001$, respectively).

In the subset of 24 patients with highest RS at baseline and more severe joint involvement, we observed a significant worsening in both radiological and clinical parameters (RS at baseline vs two years $p < 0.001$; NJI vs NJI2 $p < 0.001$; AJ vs AJ2 $p < 0.012$). Concerning HLA, in this subgroup of patients we observed higher frequency of the allele A24 (29.1%), A2 (45.8%), DRB1 11 (37.5%), DRB 07 (16.6%).

Conclusions: EOA clearly differs from non-EOA in many aspects, including the higher AJ and RS, so confirming its severity. We observed a more aggressive clinical course in the subgroup of patients who presented higher scores at the first visit. The association with some HLA alleles, in particular A2, A24, DRB 07 and 11, suggests a more severe subset of patients. Further studies are needed to confirm these data.

286 DIFFUSE IDIOPATHIC SKELETAL HYPEROSTOSIS (DISH) AT, OR BEFORE, THE FIFTH DECADE OF LIFE

R. Mader¹, I. Lavi². ¹Ha'Emek Medical Center, Afula, ISRAEL, ²Carmel Medical Center, Haifa, ISRAEL

Purpose: At present, the diagnosis of DISH is based on characteristic finding in radiographs of the thoracic spine, which are not often ordered.

Due to the clinical and metabolic implications of such a diagnosis, and for research purposes, diagnosis in earlier age may be beneficial. We tried to identify factors, in clinical practice, that might be useful to increase the index of suspicion for this disorder, in a relatively young age.

Methods: From our cohort of 140 patients with DISH, we identified 18 patients (12.8%) who were diagnosed before the age of 50 years (group A). This group was compared to 20 patients of similar age with osteoarthritis (group B), and 24 patients with DISH diagnosed after the age of 60 years (group C). All the patients with DISH met the Resnick classification criteria, and all OA patients did not have radiological findings suggestive of DISH. Data collection included demographic characteristics, body region of main complaint (ie upper or lower limbs, cervical, thoracic, or lumbar spine, chest, hips and shoulders girdle), clinical or radiographic evidence for enthesopathies or tendonitis, length of follow-up, BMI, serum lipid profile, family history of diabetes mellitus (DM), hypertension (HTS), and gout. The presence of ischemic heart disease (IHD), cerebral vascular disease (CVD), DM, and HTS, were recorded at presentation and during the follow-up period. The use of blood pressure lowering agents, anti diabetic medications, lipid lowering agents, aspirin or other antiplatelet medications, allopurinol, and anti anginal medications were also recorded at presentation and during the follow-up period.

Results: Gender distribution was similar in all groups. The mean age at presentation for groups A, B, and C was 45, 50 and 69 years respectively, and the mean follow-up was 6.6, 7.9, and 4.3 years respectively. Patients in group A compared to group B, had statistically significant more pain in the lumbar and thoracic spine ($p=0.001$ and 0.016 respectively), and were more likely to be obese ($BMI \geq 30$, $p=0.014$). They were also more likely to have a first degree relative with HTS and DM ($p=0.015$ and 0.05 respectively). Enthesopathies and/or tendonitis were significantly more common in group A ($p=0.028$). Patients in group A were more likely to have DM and were more often prescribed anti diabetic medications during follow-up, although these did not reach statistical significance. No statistical differences were observed for any of the investigated items between group A and group C except for a significantly higher occurrence of HTS in group C.

Conclusions: Individuals in their fifth decade of life are likely to be affected by DISH if they are obese, have a first degree relative with either HTS or DM, complain of lumbar or thoracic spinal pain, and are affected by enthesopathies or tendonitis. These individuals have a tendency to have or develop DM. The variables examined in this study, in patients with DISH, did not differ between the age groups.

287 CORRELATION BETWEEN POSTURAL BALANCE, MUSCLE STRENGTH, PAIN AND HIP FUNCTION IN PATIENTS WITH OSTEOARTHRITIS BEFORE AND AFTER TOTAL HIP ARTHROPLASTY: A PROSPECTIVE CONTROLLED FOLLOW-UP STUDY

I. Yukse¹, S. Citaker¹, D. Kaya¹, N. Tugay², G.I. Guvendik¹, B. Atilla¹, M. Tokgozoglu¹. ¹Hacettepe University, Ankara, TURKEY, ²Mugla University, Mugla, TURKEY

Purpose: Improvement of postural stability is one of the most important rehabilitative goals to prevent falling and consequent loosening or dislocation of the prosthesis in patients with total hip arthroplasty (THA). Some of the previous studies revealed that despite capsulectomy, no significant loss was observed in proprioceptive sense in THA patients. However, balance deficits and abductor muscle weakness generally persisted. The aims of this study were (1) to compare the postural balance and lower extremity muscle strength in THA patients with healthy subjects and (2) to evaluate the factors – aside from proprioception – related to postural stability in patients with hip osteoarthritis, before and after THA.

Methods: A total of 20 THA patients and 20 age- and sex- matched healthy controls were included in this prospective controlled follow-up study. Balance and related parameters were evaluated before THA and then 6 weeks, three months and six months postoperatively. Balance was examined using stabilometry. Muscle strength (maximal voluntary contraction) of the lower extremity was measured with strain gauge myometer. Other parameters analysed as possible causes of balance impairment were; range of motion, leg length discrepancy, pain intensity and Harris Hip Score. All of the patients were given supervised postoperative physiotherapy during their hospitalization. They were also given a home exercise program at the time of discharge. Data were evaluated using Spearman correlation analysis, and t tests.

Results: Compared to the healthy controls, patients with THA showed significant balance deficit at all measurements ($p < 0.05$). No statistically significant difference was found between the preoperative and follow-up

balance index scores in the THA group ($p > 0.05$). Some of the big muscles – especially the hip abductors – of the lower extremities were found to be significantly weaker in osteoarthritic hips (preoperatively) than that of their contralateral legs ($p < 0.05$) and also than that of control subjects ($p < 0.05$). At six weeks after THA, significant deficits were observed in muscle strength as compared to preoperative values ($p < 0.05$). These muscles became significantly stronger than preoperative levels at the end of the third and sixth months but especially hip abductors remained weaker than that of controls. Significant correlations were found between the strength of hip and knee flexor muscles and balance index score ($r = -0.577$; $r = -0.641$) at postoperative three months and also between the knee extensor muscle strength and balance index score ($r = -0.566$) at six months. Patients with stronger muscles had better postural stability. In the THA group, Harris Hip Score was correlated with the balance index score ($r = -0.877$) at three months follow-up. No correlation was found between the balance and other variables.

Conclusions: As muscle strength and hip function was found to be a strong predictor of better balance performance, rehabilitation programs that focus on strengthening of the hip muscles as well as postural control and proprioception exercises can improve the balance of these patients and prolong survival after prosthesis.

288 HAND OSTEOARTHRITIS IN OLDER WOMEN IS ASSOCIATED WITH CAROTID AND CORONARY ATHEROSCLEROSIS: THE AGES-REYKJAVIK STUDY

H. Jonsson¹, G.P. Helgadóttir², T. Aspelund², G. Eiriksdóttir³, S. Sigurdsson³, T. Ingvarsson⁴, T.B. Harris⁵, L. Launer⁵, V. Gudnason². ¹Landspítalinn University Hospital, Reykjavik, ICELAND, ²University of Iceland, Reykjavik, ICELAND, ³Icelandic Heart Association, Reykjavik, ICELAND, ⁴Akureyri Central Hospital, Akureyri, ICELAND, ⁵National Institute on Aging, Bethesda, MD, USA

Purpose: There is some evidence that atherosclerosis may contribute to the initiation or progression of osteoarthritis (OA). To test this hypothesis, we compared the presence and severity of hand osteoarthritis (HOA), scored from photographs, with markers of atherosclerotic vascular disease in an elderly population.

Methods: The AGES-Reykjavik Study is a population-based multidisciplinary study of aging in the elderly population of Reykjavik. The participants were 2264 males, mean age 76 ± 6 , and 3078 females, mean age 76 ± 6 . Evidence of HOA was recorded from high quality digital photographs and given a global score of 0–4 based on the number and the severity of affected DIP, PIP and CMC1 joints. The measures of atherosclerosis included carotid intimal thickness and plaque severity by ultrasound, coronary and aortic calcifications by computed tomography, and reported cardiac and cerebrovascular events for association.

Results: After adjustment for confounders including age and smoking, both carotid plaque severity (CPs), and coronary calcifications (CAC), were significantly associated with the presence of HOA in females with an odds ratio of 1.42 (1.14–1.76, $p=0.0016$) for having coronary calcifications, and 1.25 (1.04–1.49, $p=0.0159$) for having moderate or severe carotid plaques. Both CPs (Moderate or severe) and CAC (presence/absence) also exhibited significant linear trends in relation to HOA severity in females ($p=0.00002$ and $p=0.027$ respectively for trend). No significant associations were seen in males. Despite this evidence of increased atherosclerosis, females with HOA did not report proportionally more previous cardiovascular or cerebrovascular events.

Conclusions: These results indicate a linear relationship between the severity of HOA and atherosclerosis in older females. Thus, the pathological process of HOA seems to have some components in common with atherosclerosis. Prospective studies may help clarifying the mechanisms of this relationship.

289 MAGNITUDE OF THE SYMPTOMATIC AT 3, 6 AND 12 MONTHS AFTER TOTAL ARTICULAR REPLACEMENT IN HIP AND KNEE OSTEOARTHRITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

J.C. Fernández-López¹, L. Gossec², M. Dougados². ¹Rheumatology Division, Clinical Research Unit, CH Universitario Juan Canalejo, Coruña, SPAIN, ²René-Descartes University, Medicine Faculty; AP-HP, Cochin Hospital, Rheumatology B Department, Paris, FRANCE

Purpose: Despite the fact that Total Articular Replacement (TAR) is proposed as the optimal therapy in advanced disease Osteoarthritis (OA),