with intra-articular administered HA and CS showed a favourable outcome for HA. The same conclusion can be made comparing HA and CS with placebo (in favour of both HA and CS) and high molecular weight HA compared with low molecular weight HA in the treatment of patients with hip OA (in favour of high molecular weight HA). We believe that the main reason for this, is the fact that there is a lack of power of included studies/patients. Especially comparing an active treatment with placebo.
Larger randomized controlled trials performed in the future (including the results of our own study comparing 315 patients with hip OA treated with either intra-articular administered HA, CS or placebo) will give us better information about the most favourable treatment.

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COMPARISON OF TWO HYALURONIC ACID FORMULATIONS FOR SAFETY AND EFFICACY (CHASE) STUDY OF KNEE OSTEOARTHRITIS: A MULTICENTER, RANDOMIZED, DOUBLE-BLIND, 26 WEEK NON-INFERIORITY TRIAL COMPARING DUROLANE® TO ARTZ®

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Purpose: To compare efficacy and safety of intra-articular hyaluronic acid (HA) in two formulations: one 3.0ml injection of Durolane® vs five 2.5ml injections of ARTZ® for the treatment of knee osteoarthritis pain.
Methods: Subjects (N=349) from the People's Republic of China were randomized to treatment (Durolane=175, ARTZ=174). The Durolane group received 3.0ml at week 0 (baseline), with sham skin punctures at weeks 1, 2, 3, and 4. The ARTZ group received one 2.5ml injection at each of the same time points. The primary assessment was a Likert pain scale (Western Ontario and McMaster University scale, WOMAC). Secondary assessments included WOMAC scales of physical function and knee stiffness, and global self-evaluationat weeks 0, 6, 10, 14, 18, and 26. The primary analysis was non-inferiority of Durolane over 18 weeks, with secondary analysis over 26 weeks, with a priori non-inferiority defined as 8% of the respective scale. Only acetaminophen was permitted as rescue analgesia and all adverse events (AEs) were recorded.
Results: Overall study retention was excellent; 332 (95.1%) subjects completed 18 weeks and 319 (91.4%) completed 26 weeks, with no significant retention difference between treatment arms. All variables met non-inferiority criteria over 18 and 26weeks and efficacy response was >90%. Treatment-related AEs were 9.8% (17/174) for Durolane and 13.1% (23/175) for ARTZ.

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IS THE SURGICAL EPICONDYLAR AXIS A SUBSTITUTE FOR THE FLEXION- EXTENSION AXIS?

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Purpose: The importance of rotational alignment of the femoral component for total knee arthroplasty (TKA) has been widely recognized because it has a direct influence on the flexion gap and balance and patella tracking. The surgical epicondylar axis (SEA) is one of reliable landmarks for properly rotating the femoral component in the axial plane. We previously reported that the SEA was a reliable surgical landmark in the coronal plane as well as in the axial plane. However, the balance and the gap might be asymmetric at several points between 0° of extension and 90° of flexion, even if they are appropriate for both 0° and 90°. The soft tissue imbalance and gap asymmetry has been observed in the midrange using a tensor in TKAs. The aims of the study were to measure the distances between the SEA and the margin of the medial / lateral femoral condyles at 0°, 30°, 60°, 90°, and 120° of flexion and to investigate whether the SEA could be used as the rotational axis of the knee. Additionally, comparisons were made according to gender.
Methods: A total of 60 knees in 54 patients with osteoarthritis undergoing TKA or high tibial osteotomy were enrolled. The patients included 28 men and 26 women with a mean age of 67.6 years. A preoperative computed tomography (CT) images (SOMATOM Sensation 16, Siemens, Munich, Germany) of the whole lower extremity with 1.5mm slice thickness were incorporated into Orthomap3D (Stryker, Kalamazoo, MI), which enabled us to select anatomical landmarks and determine three-dimensional linear and angular measurements by simultaneously referring to the sagittal, coronal, and axial planes. The SEA was defined as a line connecting the sulcus of the medial epicondyle and the lateral epicondylar prominence, and this line was designated as the X- axis. The Y- axis was defined as a line drawn perpendicularly from the center of the femoral head to the X- axis. The Z- axis was defined as the cross product of the X- and Y- axes. The distance between the SEA and the margin of the lateral femoral condyles (LD) at 0°, 30°,60°, 90°, and 120° of flexion and the distance between the SEA and the margin of the medial femoral condyles (MD) at 0°, 30°, 60°, 90°, and 120° of flexion were measured. The measurement deviations among each angle were compared using one-way analysis of variance with the post hoc Tukey-Kramer test for multiple post hoc group comparisons. Comparisons were made according to gender using the Mann-Whitney's U test. P values of <0.05 were considered statistically significant.
Results: The mean LD with knee at 0°, 30°, 60°, 90°, and 120° were 24.8, 24.2, 24.3, 23.3 and 21.1 mm, respectively. The mean MD at these same degrees were 25.7, 25.2, 26.1, 25.7 and 23.1 mm, respectively. There were no significant differences in linear measurements among 0°, 30°, 60°, and 90°. However, significant differences were observed between each linear measurement at 0°, 30°, 60°, and 90° and the linear measurement at 120° (p<0.001). Both medial and lateral linear measurements at each degree were statistically different between genders (p<0.01).
Conclusions: The relationship between the SEA and the rotational axis of the distal femur remains unclear. Several studies have shown that the fixed flexion extension axis coincided with the SEA. The morphologic study of the distal femur showed that the arc of the femoral condyles that fitted a circle was from 0 to 90 of knee flexion. It was not applied in deep flexion beyond 90 and the most posterior aspects of the femoral condyles were no longer circular. On the contrary, the condyles were reported to be cylindrical in shape between 20° and 120°. In our study, the distances between the SEA and the margin of the medial/lateral femoral condyles were significantly identical at 0°, 30°, 60°, and 90° of flexion with the exception of the distance at 120°. This study assists understanding of knee kinematics and provides useful information for the design and positioning of TKA.

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LOWER PROLIDASE LEVELS ARE EXPRESSED BY SYNOVIAL TISSUE OF KNEE OSTEARTHRITIS PATIENTS

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Purpose: To evaluate the role of prolidase levels as the enzyme responsible for the recycling of the collagen in synovial tissue
Methods: the expression of synovial prolidase and the degree of synovial neovascularization in a group of 20 consecutive knee OA patients undergoing total knee arthroplasty was comapared, with a control group of 20 patients undergoing knee arthroscopy for internal derangement of the knee. A knee power Doppler ultrasound (PD) was done for all patients and controls before surgery to identify areas of hypervacularization to establish the best biopsy sampling site. Immunohistochemistry was performed with antibody anti - factor VIII to identify vascular endothelial cells and to compare them with power Doppler findings. Finally, the anti - prolidase antibody immunofluorescence assay was used to identify and to semi-quantitatively evaluate the enzyme expression. Images were captured on a cell Floid epifluorescence system and analyzed with the image J software and data expressed as arbitrary fluorescence units (AFU).
Results: Patients with OA had a mean age of 70 ± 7.7 years, while the control group had 36.3 ± 9.8 years. The prolidase enzyme identified in the synovial tissue of OA patients was significantly lower when compared with the control group (0.017 ± 0.009 vs 0.062 ± 0.04 UAF respectively $p < 0.05$). The presence of PD signal was higher for patients with OA, this increase correlated with the number of microvessels identified in tissue samples (11 + 5.3 vs 4 + 2.1, p = 0.003).
Conclusions: The decreased expression of prolidase enzyme present in the synovium of OA patients is perhaps linked to a loss of extracellular

matrix remodeling process induced by an inflammatory micro-environment suggested by the presence of synovial hyper-vascularization.

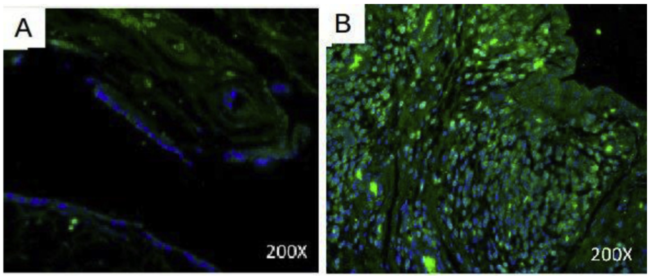

Figure 1. Prolidase protein expression: A) Hipertrophy synovial of patient with OA B) Normal synovium

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MANUAL LABOR OCCUPATIONS INCREASE THE SHORT-TERM INCIDENCE OF KNEE OSTEOARTHRITIS IN JAPANESE, BUT NOT CAUCASIAN SUBJECTS

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Purpose: To determine the interacting role of occupation and obesity on the risk of incident knee osteoarthritis (OA) among Caucasian and Japanese women.

Methods: We used data from women in two prospective community-based cohorts, the UK based Chingford study and the Japanese Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study. Incident radiographic knee osteoarthritis (RKOA) was defined as having Kellgren and Lawrence (K/L) grade 0 or 1 in both knees at baseline and a K/L grade 2 or greater at follow up. Follow-up x-rays were taken after a median of 4 years after baseline for Chingford and 3 years in ROAD. The cut-off for a normal BMI was ≤25 kg/m2 for the Caucasian subjects and ≤23 kg/m2 for the Japanese subjects. Occupation was divided into manual versus non-manual (i.e. sedentary/moderate activity) for both populations based on self-assessment.

Multivariable logistic regression models assessed of risk of obesity, occupation and their interaction on incident RKOA, controlling for age, hand grip strength, walking distance, smoking and alcohol intake.

Results: 12.4% of Caucasian and 14.5% of Japanese women developed incident RKOA in at least one knee. Being overweight/obese was associated with an increased risk of incident RKOA in both populations (Caucasian OR 1.7 [95% CI 1.0, 2.8]; Japanese OR 2.5 [95% CI 1.3, 4.9]), however having a manual labour occupation was only significantly associated with incident RKOA in the Japanese subjects (OR 2.8 [95% CI 1.3, 5.8]). No significant interaction between BMI category and occupation was found for either population (Chingford p=0.070; ROAD p=0.291), however the Japanese population showed a slight increase in risk for manual labour occupations in the overweight/obese category (OR 4.7 [95%CI 1.4, 16.1]) compared to the normal group (OR 2.6 [95% CI 1.0, 6.7]). No significant association was found in the Caucasian women for either BMI category (normal: OR 0.7 [95%CI 0.2, 2.1]; overweight/obese: OR 2.0 [95%CI 0.9, 4.8]).

Conclusions: Manual labour occupations increase the short-term risk of incident RKOA in Japanese, but not Caucasian women. This risk was greater for overweight/obese subjects than those in the normal weight category.

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THE PREVALENCE AND CLINICAL SIGNS AND SYMPTOMS OF LOW BACK PAIN IN PEOPLE WITH HIP OSTEOARTHRITIS: A CROSS SECTIONAL STUDY

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Purpose: Low Back Pain (LBP) has been widely reported in the hip OA population and commonly coined as Hip-Spine syndrome. Estimates of prevalence are variable and range between 21.2-61.5%. To date, most studies investigating LBP prevalence in hip OA have been conducted in those with advanced disease awaiting replacement surgery. The aim of this study was to firstly determine the prevalence LBP in people with hip OA attending outpatient clinics in an acute hospital setting. The second aim was to identify the clinical features associated with LBP in people with hip OA based on self-report symptoms and physical examination.

Methods: A cross-sectional observational study involving a one-off assessment was undertaken. Local ethics committee approval was obtained. Back and hip pain severity were measured using the Visual Analogue Scale (VAS). The Western Ontario and McMaster universities osteoarthritis index (WOMAC) and the Roland Morris Disability Questionnaire (RMDQ) were used to measure hip and back-related disability respectively. Physical assessment consisted of lumbar spinal palpation, pelvic pain provocation tests and active hip and spinal Range of Motion (ROM). Reproduction of the participant's usual symptoms was recorded for all procedures. Variables were analysed based on presence or absence of back pain, using non-parametric Mann-Whitney U tests for continuous variables.

Results: A total of 22 people with radiographically confirmed hip OA were recruited (13 female). Total prevalence of LBP was 16/22 (72.7%). The most common pain location for both LBP (n=16) and non-LBP groups (n=6) was the groin, lateral thigh, knee and anterior thigh, with no significant difference in the number of pain locations between groups (p=0.13). There was a significant moderate correlation between hip and LBP severity (r=0.58, p=0.005), duration of hip and LBP symptoms (r=0.61, p=0.02), but not between hip severity and duration of symptoms (r=0.07, p=0.73). Those with LBP were significantly younger and had higher WOMAC pain and disability (Table 1). Mean hip symptom duration of LBP group was over twice that of non-LBP group, but did not reach statistical significance (p=0.08). In relation to ROM, only hip flexion was significantly different between the two groups (LBP mean= 73.91; non-LBP ean=91.33; p=0.03). The median number of painful spinal levels was higher in LBP group, but not significant (LBP median=5, IRQ=7.75; non LBP median=1, IRQ=7.5; p=013). Median number of positive pain provocation tests was also higher in LBP group (median=1, range=4; non-LBP median=1, range=1; p=0.03).

Conclusions: A high LBP prevalence rate was reported in a cohort of people with hip OA in an acute hospital setting. Those with LBP

Table 1
Profile of Participants by presence or absence of back pain

	All (n=22)	LBP group (n=16)	Non LBP group (n=6)	p-value
Age (years)	65.64 (8.43)	62.44 (7.19)	74.17 (4.83)	0.001
BMI (kg/m^2)	29.08 (5.63)	28.97 (6.28)	28.40 (3.87)	0.59
Number of Co- morbidities	0.95 (0.89)	0.81 (0.92)	1.33 (0.82)	0.20
Hip symptom Duration (months)	31.27 (35.12)	37.19 (37.8)	15.50 (22)	0.08
Back symptom Duration (months)	89.31 (110.15)	89.31 (110.51)	0	N/A
Hip Pain severity (VAS) (0-10cm)	4.87 (2.8)	4.98 (2.86)	4.57 (2.87)	0.87
Back Pain severity (VAS) (0-10cm)	3.99 (3.94)	5.48 (3.61)	0	N/A
WOMAC Function (0-68)	32.27 (15.71)	37.81 (12.31)	17.50 (14.90)	0.01
RMDQ (0-24)	7.32 (6.56)	10.06 (5.56)	0	N/A