units. The AIR increased seromucoids to 95.1±5.7 vs 8.4±1.6 mg/dl in controls ($p < 0.05$). The AIR reduced CYP3A6 activity to 5972±464, 5415±541 and 2639±747, and CYP1A2 activity, 3026±113, 3856±1151, 3805±753 for control, 20 and 30 days of CS, respectively ($p < 0.05$ compared without AIR). CS did not affect NADPH activity or expression.
Conclusions: It is concluded that CS does not affect activity or expression of CYP3A6 and CYP1A2, nor prevents AIR-induced down-regulation. These results are in agreement with the absence of CS-drug interactions in humans.

534 SIX-MONTH EFFICACY OF INTRA-ARTICULAR HYALURONIC ACID FOR CARPOMETACARPAL JOINT OSTEOARTHRITIS

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Purpose: To investigate the six-month efficacy of a three intra-articular hyaluronic acid (HA) injection course on pain relief in osteoarthritis (OA) of the carpometacarpal joint (CMC).
Methods: Thirty-nine female patients affected by symptomatic CMC OA (aged 66±8 years, mean±SD) were treated with three once-weekly intra-articular injections of HA (Hyalgan 1 ml). All subjects met ACR criteria for hand OA and had CMC OA grade 1−4 according to Kellgren and Lawrence on standard X-ray performed within 6 months before the inclusion. Fifty-nine CMC joints were treated and evaluated (twenty-three patients underwent to bilateral injections, thirteen patients had only one hand treated). Patients were followed for a 6-month period after the last injection. Treatment efficacy was assessed through visual analogue scale (VAS) pain quantification (baseline; 2nd and 3rd injection; one, three and six months after the last injection). Side effects were recorded.
Results: VAS was significantly reduced after the first injection (2nd injection vs baseline, $p < 0.01$; 3rd injection vs baseline, $p < 0.0001$; 3rd injection vs 2nd injection, $p < 0.05$) and reached the slowest score one month after the last injection. The efficacy was maintained for all the 6-month follow-up period (one month vs baseline, $p < 0.0001$;three months vs baseline, $p < 0.0001$; six months vs baseline, $p = 0.0001$ – one month vs 3rd injection, p = n.s.;three months vs 3rd injection, p = n.s.; six months vs 3rd injection, p = n.s.). Only minor side effects were observed (mild pain and/or ecchymosis in injection site).
Conclusions: Our study supports viscosupplementation with HA as a safe and efficacious approach for symptomatic CMC OA. Our schedule based on three weekly intra-articular injections supplies pain relief lasting as long as 6 months with negligible side-effects.
Further studies are needed to determine the long-term efficacy and the optimal treatment schedule.

535 TWELVE WEEKS MULTIMODAL CONSERVATIVE TREATMENT OF KNEE OSTEOARTHRITIS USING A NEWLY DEVELOPED TREATMENT PROTOCOL IN THE NETHERLANDS: PRELIMINAIRY RESULTS

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Purpose: Recently extensive evidence based recommendations have been made in the Netherlands for diagnosis and treatment of knee and hip osteoarthritis (OA). Based on this a three months standardized treatment protocol was developed including education, advice about weight loss and lifestyle measures, use of analgetics, referral for physical therapy and when necessary other interventions like intra-articular injections. To implement this protocol an outpatient clinic was initiated for conservative treatment of primary osteoarthritis of the knee. The aim of this study was to assess the results of a standardized conservative treatment protocol for knee OA.
Methods: Patients with symptomatic clinical knee OA according to the ACR classification criteria referred to the rheumatology department by general practitioners were treated at the outpatient clinic of the Sint Maartenskliniek. In addition to patient education, treatment consisted of three main modalities: stepwise analgesia, referral to exercise therapy using 'graded activity principle' and weight reduction advises if necessary. Visits took place at the outpatient clinic at intake and after 12 weeks; patients were contacted by telephone at 4 and 8 weeks. Pain and ADL function were measured using a Likert scale (0−10) for pain and patient global assessment (PGA) and using WOMAC compatible subscales of the Knee injury and Osteoarthritis Outcome Score (WKOOS) (Likert scale version). WKOOS based OMERACT-OARSI responder criteria were measured in all patients after twelve weeks. Finally kinesiophobia was measured using the Tampa Scale of Kinesiophobia (TSK).
Results: Fifteen patients (13 females, mean age (±SD) 62±12) were thus far included. At intake the following values were found (mean±SD): pain and PGA 6.1±1.9 and 6.1±2.5 respectively, WOMAC compatible subscales for pain, stiffness and function 11±4.4, 4.5±1.5 and 38±14 respectively, BMI 34.4±4.8 and TSK scores 40±6 (cut-off for irrational kinesiophobia >37). After twelve weeks pain, PGA, BMI and TSK did not change significantly: scores were 6.4±3.2 ($p = 0.8$), 6.2±2.7 ($p = 0.9$), 33.7±5.0 ($p = 0.09$) and 39±5 ($p = 0.3$) respectively. WKOOS based OMERACT-OARSI responder criteria were however met in 40% of the patients.
Conclusions: Although 40% of patients met the OMERACT-OARSI responder criteria using this protocol, mean pain and ADL function did not change, indicating that a subgroup of patient worsened. However, this sample probably reflects a highly selected population. Future research should be directed at identifying prognostic factors for non-response such as body weight and kinesiophobia.

536 EFFECTS OF EXOGENOUSLY INJECTED HYALURONAN ON THE ARTICULAR CARTILAGE IN A RAT IMMOBILIZED KNEE MODEL

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Purpose: Joint immobilization is an essential treatment in daily examinations but it also causes degeneration of the articular cartilage. Intra-articular hyaluronan (HA) injection is widely used as a treatment of osteoarthritis (OA) due to its physical and biological activities. Though a large number of studies regarding chondroprotective effects of HA on OA animal models have been reported, most of these are based on joint instability models by resection of ligaments or meniscus. There were few reports of the effects of HA regarding immobilized joints. In this study, we examined the chondroprotective effects of exogenously administered HA in a rat immobilized knee model.
Methods: *Animals*: A total of 84 adult male Sprague-Dawley rats weighing from 380–400 g were used. Their unilateral knee joints were immobilized rigidly at 150º in flexion with a plastic plate and metal screws placed internal but extra-articularly for various periods (1, 2, 4, 6, 8, 12, and 16 weeks). 50 μl of HA (molecular weight = 1.9×10^6) was administered intra-articularly for HA group on the day after surgery and once a week until euthanasia. The same amount of saline was administered for control group. *Tissue Preparation*: The specimens were fixed with 4% paraformaldehyde. After decalcification and dehydration, the specimens were embedded in paraffin. The embedded tissue was cut into 5 μm sagittal sections. Standardized serial sections were created in the medial midcondylar region of the knee. *Histological Evaluation*: We chose 3 areas (non-contact, transitional, and contact area) from the articular surface of the femur and tibia. A degree of degeneration in each section from the 6 areas was evaluated respectively using the histological grading scheme (modified Mankin's score). The thickness of the total articular cartilage was measured and the number of chondrocytes was counted in each area, respectively.

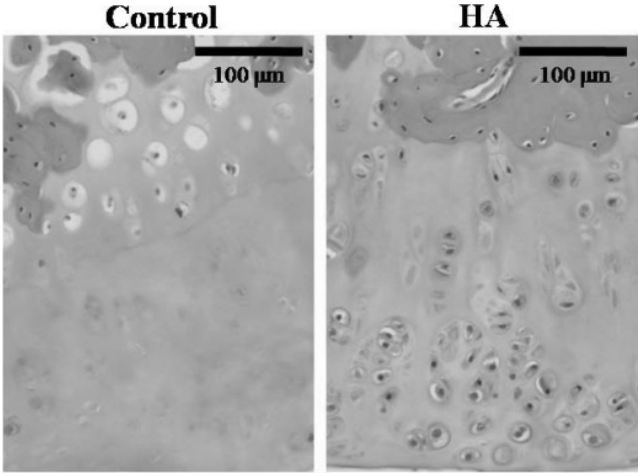

Figure 1. Femur contact area 16 weeks.