minimal arthrotomy. Following surgery, patients were evaluated on safety and efficacy of the implantation of CartiLife™ at weeks 8, 24, 48, 96. A clinical assessment is performed by completing the subjective International Knee Documentation Committee (IKDC) form, measuring Lysholm scores and measuring Tegner activity scores. MRI scanning and evaluation was performed on all patients 48 and 96 weeks after operation.

Results: No adverse events related to the implantation of CartiLife™ were observed during the 2-year follow up. The IKDC scores, Lysholm scores and Tegner activity scores have improved in all patients when compared to their respective pre-operative status. The 48 and 96 week follow-up MR images in each patient show that the graft, with a thickness similar to that of the adjacent cartilage, has well integrated with the adjacent cartilage and the underlying bone.

Conclusions: The overall results of the analysis of this clinical trial suggest that CartiLife™ is a fairly safe drug and shows potential as new therapeutics to improve the function and pain in patients with damaged articular cartilage. However there are limitations due to the lack of a control group, short-term follow up, and a small number of participants which render further study necessary to confirm efficacy.

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APPA COMPARED AGAINST MELOXICAM IN CANINE OA

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Purpose: APPA is a synergistic combination of 2 antiinflammaory molecules (acetovanillone and paeonol). The trial was designed to test the comparative efficacy of osteoarthritis (OA) treatments in client-owned dogs at week 2 and week 4 against the week 1 untreated baseline. 80 dogs were included in the study diagnosed with naturally occurring osteoarthritis (carpal, elbow, shoulder, hock, stifle, hip) confirmed by radiography. Primary outcomes the dogs were appraised at days 21 and day 35. using (i) Force Plate Analysis (FPA), (ii) 5 point clinical examination by veterinarians, blinded to the treatment groups and (iii) Quality of Life (QoL) questionnaire completed by the owners.

Methods: The dogs were randomly divided into 4 groups of 20. 1 week run-in with 80 dogs without treatment. The treatments using either APPA (45mg/kg twice daily) or Placebo (45mg/kg twice daily) in groups 1, 2, 3, and 4 was blinded. The administration of Meloxicam (0.1 mg/kg/d) could not be blinded. No other pain medications, including nutraceutical, were administered to any of the dogs for the duration of the study. All dogs receiving Meloxicam also received stomach protection (Famotidine).

Results: A total of 72 dogs completed the study with 6 drop-outs from the two Metacam groups due to gastrointestinal problems notwithstanding that they were also receiving Famotidine. The mean body mass was 29.45 ± 11.05 kg, the mean age 9.0 ± 3.04 years. A significant placebo effect was never observed at any time point for any measurement. Significant benefits were detected for APPA ($P < 0.005$), Meloxicam ($P < 0.02$) , APPA+Meloxicam ($P < 0.001$) in the orthopaedic examination at days 21 and 35, pain score for APPA ($P < 0.05$) and APPA+Meloxicam ($P < 0.005$) at days 21 and 35, function for APPA ($P < 0.01$) and APPA+Meloxicam ($P < 0.001$) at days 21 and 35, and FPA symmetry index for APPA ($P < 0.01$), Meloxicam ($P < 0.01$) , APPA+Meloxicam ($P < 0.05$) at day 21 and APPA+Meloxicam ($P < 0.01$)at day 35.

Conclusions: In a previous OA study APPA, in client-owned dogs, normalized gait asymmetry as measured with an objective force plate system (FPA). For ethical reasons this study was not blinded and was not placebo controlled. In contrast this 2nd OA study was blinded with a placebo control group. Using the FPA which only evaluated OA dogs walking at gentle pace in a straight line (1.2m/sec) it was decided to include, concurrent with the FPA, a more detailed and extended range of gait/pain evaluations that would provide a more objective picture of the patient clinical responses to the drug interventions. APPA has demonstrated significantly decreased disease progression in a rat meniscal tear model of OA, but disease progression was not examined in this dog study.

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STEPPED CARE APPROACH FOR MEDIAL TIBIOFEMORAL OSTEOARTHRITIS

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Purpose: The current approach in the management of osteoarthritis is primarily palliative and is aimed at alleviating symptoms. By contrast, current literature is increasingly advocating the identification of prognostic indicators, such as muscle weakness, mal-alignment and depression that may be amenable to treatment. That is, to provide a more holistic approach to the management of osteoarthritis as well as to facilitate an improvement in an individual's joint pain and function rather than treating every patient with a "one size fits all" approach. With this is mind, the aim of this study is to evaluate whether a stepped care treatment program will determine the optimal management for a heterogeneous group of persons with medial tibiofemoral OA.

Methods: This study represents a single-center, randomized controlled trial of persons greater than 50 years of age, with medial tibiofemoral knee OA and a BMI $\geq$ 28. A total of 170 participants fulfilling the American College of Rheumatology (ACR) criteria for knee OA and radiographic evidence of OA (KLG $\geq$ 2) will be randomised. In addition, because we are interested in persons with predominantly medial tibiofemoral OA, participants will have radiographic evidence of disease in the medial tibiofemoral compartment without predominant lateral tibiofemoral or patellofemoral involvement. Medial tibiofemoral disease (1) requires definite radiographic OA with at least grade 1 medial joint space narrowing (0-3 scale) using the Osteoarthritis Research Society International (OARSI) atlas (2). Individuals with clinical evidence of predominant patellofemoral OA will be excluded. Participants that have been identified at baseline to have medial tibiofemoral OA will be randomised to either the treatment or the control groups. Randomisation will be stratified by 2 groups of disease severity namely KLG2,3 vs. KLG 4. The treatment group will follow a diet and exercise program for 20 weeks. Participants in both the active treatment and control groups will have their PASS scores (pain VAS, global assessment score VAS and the WOMAC function questionnaire) recalculated and their weight and BMI measured at 20-week. These PASS scores will be used to ascertain whether a patient has reached disease remission. For participants in the active treatment group that have achieved a PASS score equivalent to disease remission ($\leq$32.3mm for pain, plus $\leq$32.0mm for global assessment score OR $\leq$31mm for the WOMAC questions), will continue with the diet and exercise program until the final reassessment at 32 weeks. If disease remission has not been achieved, they will enter the Stepped Treatment Strategy phase. At this point, they will be evaluated for entrance into one of three treatment arms depending on which of the following possess the most significant impediment in the attainment of disease remission. The three treatment arms will be cognitive behavioural therapy for depression (as measured by the DASS-21 questionnaire), strengthening for quadriceps weakness (measured via resisted knee extension in sitting) and unloading bracing for varus malalignment (measured via knee varus goniometry and AP knee radiograph). The control group will be provided with educational pamphlets about knee OA, largely focused on diet, exercise and weight loss. Final follow-up and assessment of disease remission will take place at 32 weeks.

Results: Recruitment and follow up for this study has commenced.

Conclusions: The Streamline trial has the potential to enhance our understanding of the OA disease process, refine targeted interventions in this prevalent disease, and aim for acceptable symptom states.

Education

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MULTIDISCIPLINARY EDUCATIONAL PROGRAM FOR PATIENTS WITH HIP- OR KNEE-OSTEOARTHRITIS: RESULTS OF A PILOT STUDY

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Purpose: Providing relevant disease-related and self-management related information helps patients to become actively involved in their own care process. A regional recognized problem in the area of Nijmegen, the Netherlands is the conflicting information about OA which is disseminated by different health professionals and health organizations. Therefore, health professionals from primary care, multiple hospitals and health organisations decided to work together and develop an educational program based on a structured inventory of informational needs and on consensus-based information addressing those needs. The aim of the present study is to 1) determine preliminary