Chondroitin & Glucosamine Sulfates Have Potential to Modify Osteoarthritis

From: Arthritis Rheum. 2008 Oct;58(10):3183-91.  Links

The effect of glucosamine and/or chondroitin sulfate on the progression of knee osteoarthritis: a report from the glucosamine/chondroitin arthritis intervention trial.

Sawitzke AD, **Shi H**, **Finco MF**, **Dunlop DD**, **Bingham CO 3rd**, **Harris CL**, **Singer NG**, **Bradley JD**, **Silver D**, **Jackson CG**, **Lane NE**, **Oddis CV**, **Wolfe F**, **Lisse J**, **Furst DE**, **Reda DJ**, **Moskowitz RW**, **Williams HJ**, **Clegg DO**.

University of Utah School of Medicine, Salt Lake City, UT 84132, USA. allen.sawitzke@hsc.utah.edu

OBJECTIVE: Osteoarthritis (OA) of the knee causes significant morbidity and current medical treatment is limited to symptom relief, while therapies able to slow structural damage remain elusive. This study was undertaken to evaluate the effect of glucosamine and chondroitin sulfate (CS), alone or in combination, as well as celecoxib and placebo on progressive loss of joint space width (JSW) in patients with knee OA. METHODS: A 24-month, double-blind, placebo-controlled study, conducted at 9 sites in the United States as part of the Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT), enrolled 572 patients with knee OA who satisfied radiographic criteria (Kellgren/Lawrence [K/L] grade 2 or grade 3 changes and JSW of at least 2 mm at baseline). Patients with primarily lateral compartment narrowing at any time point were excluded. Patients who had been randomized to 1 of the 5 groups in the GAIT continued to receive glucosamine 500 mg 3 times daily, CS 400 mg 3 times daily, the combination of glucosamine and CS, celecoxib 200 mg daily, or placebo over 24 months. The minimum medial tibiofemoral JSW was measured at baseline, 12 months, and 24 months. The primary outcome measure was the mean change in JSW from baseline. RESULTS: The mean JSW loss at 2 years in knees with OA in the placebo group, adjusted for design and clinical factors, was 0.166 mm. No statistically significant difference in mean JSW loss was observed in any treatment group compared with the placebo group. Treatment effects on K/L grade 2 knees, but not on K/L grade 3 knees, showed a trend toward improvement relative to the placebo group. The power of the study was diminished by the limited sample size, variance of JSW measurement, and a smaller than expected loss in JSW. CONCLUSION: At 2 years, no treatment achieved a predefined threshold of clinically important difference in JSW loss as compared with placebo. However, knees with K/L grade 2 radiographic OA appeared to have the greatest potential for modification by these treatments.