[2005] [SAT0211] EFFECTIVENESS OF A COLLAGEN HYDROLYSATE-BASED SUPPLEMENT ON JOINT PAIN, RANGE OF MOTION AND MUSCLE FUNCTION IN INDIVIDUALS WITH MILD OSTEOARTHRITIS OF THE KNEE: A RANDOMIZED CLINICAL TRIAL

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Background: Insoluble collagen makes up a majority of articular cartilage, and it has been theorized that new treatments should focus on improving the health of this existing joint collagen. Since collagen hydrolysate contains an abundance of the amino acids that play a role in the synthesis of collagen, which is one of the two major protein components of cartilage matrix, it may help maintain joint health. For this reason, collagen hydrolysate, a natural component of gelatine, has been suggested as a mode of treatment with minimal side effects.
Objectives: Therefore the purpose of this study was to evaluate the effectiveness of a collagen hydrosylate-based nutritional supplement on the level of joint pain, range of motion, and muscle function in individuals with mild arthritis of the knee.
Methods: Therefore the purpose of this study was to evaluate the effectiveness of a collagen hydrosylate-based nutritional supplement on the level of joint pain, range of motion, and muscle function in individuals with mild arthritis of the knee.
Results: The comparisons of pain and mobility with the two questionnaires of the Knee Pain Scale, WOMAC score section B, Lequesne-Index, 50-Foot Walk Test and 6-Minute Walk Test show no differences between the therapy groups. Changes in the range of motion were evaluated with a goniometer with no significant changes observed between groups. Muscle function was assessed with numerous measures of isokinetic leg strength on a Biodex 2000 (Biodex, NY; test-retest reliability has been studied). Significant between group differences are depicted in Table 1.

Table 1. Isokinetic Leg Strength (mean ± SD)

Variable	Baseline	Week 14	Diff Base-Week 14	p*		
Pk. Torque/BW for Ext. at 60deg/s				0.0229		
CH Group	46±16.2 (n=85)	48±15.9 (n=81)	-1.8±7.0 (n=81)			
Placebo Group	48±14.5(n=101)	47±14.1 (n=92)	0.9±6.1 (n=92)		Pk. Torque/BW for Flex. at 60deg/s	0.0266
CH Group	25±9.8 (n=85)	26±9.9 (n=81)	-1.2±5.2 (n=81)			
Placebo Group	25±8.3 (n=101)	25±7.4 (n=92)	0.3±4.6 (n=92)		Work/BW for Ext. at 60deg/s	0.0288
CH Group	56±21.0 (n=85)	59±20.9 (n=81)	-3.0±8.0 (n=81)			
Placebo Group	58±19.0(n=101)	58±18.6 (n=91)	0.5±9.0 (n=91)		Power for Ext. at 60deg/s	0.0162
CH Group	74±35.6 (n=85)	79±36.6 (n=81)	-4.7±15.7(n=81)			
Placebo Group	75±31.5 (n=101)	77±31.8 (n=91)	-0.4+/11.9 (n=91)		Power for Flex. at 180deg/s	0.0341
CH Group	61±32.3 (n=86)	69±35.8 (n=82)	-7.6±17.1(n=82)			
Placebo Group	64±32.3 (n=101)	67±30.4 (n=92)	-2.8±13.9(n=92)			

*Mann-Whitney-U-Test (α=0.05, two-sided) for difference between the therapy group.

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Conclusion: While these data show that CH supplementation does not impact subjective measures of pain more than placebo over a 14-week rehabilitation program, significantly greater improvements are seen in various more objective measures of joint function. Therefore further studies investigating the benefits of CH or other nutritional supplements during joint rehabilitation may have to also evaluate more objective measures of joint and muscle function in addition to evaluation of joint pain, mobility and range of motion.

Osteoarthritis Clinical aspects and treatment

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