

Hyaluronic acid improved walking ability and short-term knee function in osteoarthritis of the knee

Huskisson EC, Donnelly S. Hyaluronic acid in the treatment of osteoarthritis of the knee. *Rheumatology*. 1999 Jul;38:602-7.

QUESTION

In patients with osteoarthritis of the knee, is hyaluronic acid (HA) effective for relieving symptoms?

DESIGN

Randomized (unclear allocation concealment*), blinded (outcome assessor and {patients}†),* placebo-controlled trial with 6-month follow-up.

SETTING

A hospital outpatient clinic in London, England.

PATIENTS

100 patients (mean age 65 y, 67% women) who had osteoarthritis of 1 or both knees according to the criteria of the American Rheumatism Association, changes in osteoarthritis (Kellgren and Lawrence grade II or III) on radiography in the previous 6 months, consistent pain in the previous 3 months, and moderate or severe pain on walking. Exclusion criteria were grade IV changes on radiography, functional impairment of the knee, associated osteoarthritis of any other joint that might affect assessment of the knee, psoriasis, other joint diseases or infection, other painful knee conditions, serious medical illness, skin

conditions overlying the joint, or use of intra-articular steroids or radiocolloids in the previous 3 months. Follow-up at 6 months was 81%.

INTERVENTION

Patients were allocated to HA, 20 mg in 2 mL of aqueous solution ($n = 50$), or to placebo ($n = 50$) given in 5 weekly intra-articular injections.

MAIN OUTCOME MEASURES

Knee pain on walking (100-mm visual analog scale) and knee function (Lequesne Functional Index).

MAIN RESULTS

Patients in the HA group had less pain on walking at 5 weeks ($P = 0.009$) and 6 months ($P = 0.005$) than did patients in

the placebo group (Table). Knee function was more improved in the HA group at week 5 than in the placebo group ($P = 0.04$); the difference persisted to 4 months (Table).

CONCLUSION

In patients with osteoarthritis of the knee, hyaluronic acid was effective for reducing pain on walking at 6 months and improving knee function for 4 months.

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*See Glossary.

†Information supplied by author.

Hyaluronic acid (HA) vs placebo for osteoarthritis of the knee

Outcomes	Mean scores		Mean score difference (95% CI)‡
	HA	Placebo	
Walking pain at 5 wk	27.5	40.6	13.1 (1.4 to 24.8)
Walking pain at 6 mo	39.4	53.7	14.3 (1.4 to 27.2)
Knee function at 5 wk	10.0	12.1	2.1 (0.2 to 4.0)
Knee function at 4 mo	10.2	12.4	2.2 (0.2 to 4.2)

‡Mean score difference and CI calculated from data in article; differences favor the HA group.

COMMENTARY

Management of symptomatic osteoarthritis includes nonsteroidal anti-inflammatory drugs (NSAIDs), intra-articular corticosteroids, viscosupplementation, and ultimately total knee arthroplasty. In a well-executed, randomized, placebo-controlled trial, Huskisson and Donnelly have shown that viscosupplementation with a course of 5 weekly HA (Hyalgan) injections can relieve pain for 6 months and improve function for 4 months in relatively healthy patients with a mean age of 66 years. This study showed that the beneficial effect is at least as good as that achieved with NSAIDs but without the gastrointestinal side effects.

Whereas Hyalgan requires 5 injections (1), Hylan G-F 20 (Synvisc), another viscosupplementation agent, is effective after 3 weekly injections (2, 3). Findings show that courses of Synvisc injections can be repeated every 6 months and may thus provide several years of relief (3). The study by Huskisson and Donnelly showed that injection site pain and local reactions may occur in up to 30% of patients receiving Hyalgan, but such adverse effects are also common with placebo injections (1). The lateral approach with a straight knee results in the fewest problems (3).

The precise indications for viscosupplementation remain somewhat controversial, although patients with early arthritis and moderate symptoms seem to gain the most benefit from this intervention.

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References

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