

New generation knee viscosupplementation: a double blinded randomized controlled trial in patients with OA knee

CER-VD No 273/13

Conclusion

- ✓ Gait analysis is proposed as a complementary outcome measure to the standard patient-reported scores and physical measures for testing the effectiveness of HA injection.
- ✓ Gait speed and stride length are the most relevant parameters for investigation.

Introduction

Hyaluronic acid (HA) plays an important role in cartilage, where it provides adequate resistance to joint compression. Over the years, the chemical composition of viscosupplements commercially available for clinicians has evolved. Combined with HA, polyol free radical scavengers such as sorbitol and mannitol have been proposed to eliminate the oxygen free radicals found in diseased joints. These new generation viscosupplements are expected to be more effective in diminishing the signs of joint inflammation in people with knee osteoarthritis (KOA).

Material and Methods

Aim: to investigate which are the most relevant ambulatory gait parameters when assessing the effectiveness of HA injection in people with KOA.

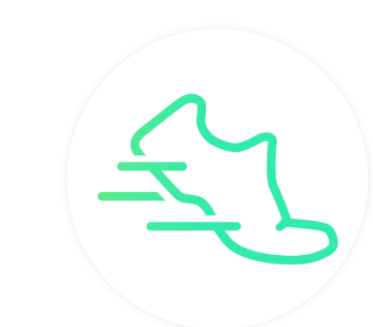
Study Design and Setting: 3-arm, prospective, randomised, double-blind, pilot study.

Subjects: n=22, primary OA (Ahlbäck II-III), randomly allocated into 3 groups: group receiving sorbitol-containing viscosupplement (HA+S, n=5), group receiving mannitol-containing viscosupplement (HA+M, n=9) and placebo group (saline, n=8).

Measurements: Gait analysis through a portable data logger Physilog[®] with 5 inertial sensors (BioAGM, Switzerland), EQ-5D, VAS pain and stiffness scores, WOMAC and KSS. Patients were assessed by blinded observers prior to the injection and at 4 weeks.


Results

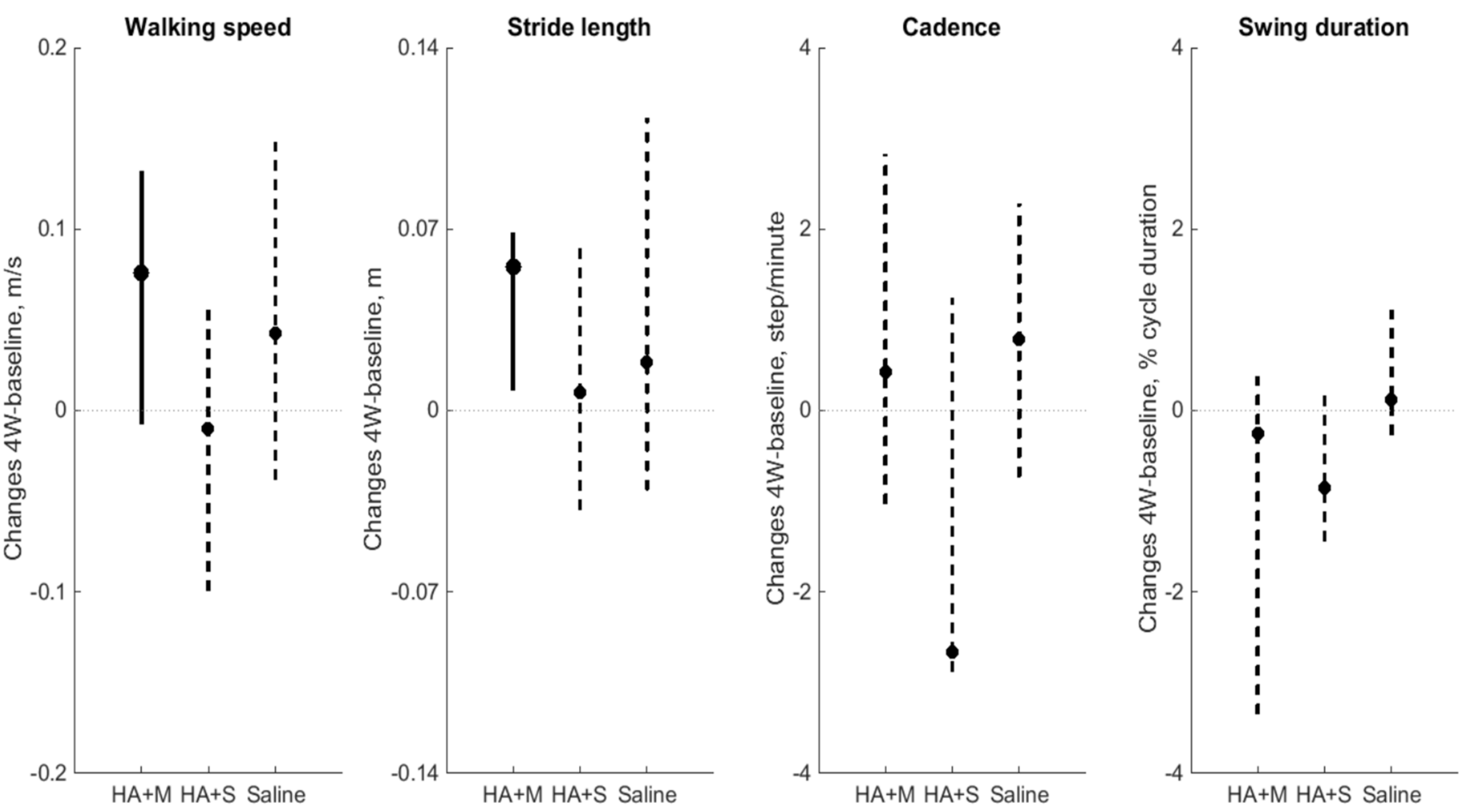
Mean (standard deviation) age of 53.50 (11.88) years, BMI of 28.39 (4.07) kg/m², twelve male (54.6%).

 Walking speed ↑ 0.076m/s (p=0.039) from baseline in the HA+M group.

 Stride Length ↑ 0.055m (p=0.027) from baseline in the HA+M group.

 KSS median ↑ of 15 points (p=0.047) from baseline in the HA+M group.

 No adverse reactions were observed.



Discussion

The mean increase in gait speed in the present study is thought to be clinically important. This represents approximately 13% more than the mean difference between healthy and KOA subjects.

