

Whether the use of synthetic HA injections are helpful for KOA has been the subject of debate for decades. Numerous published reviews on the effectiveness of HA treatment in this patient population have been inconclusive [Rutjes AW et al. *Ann Intern Med* 2012; Arrich J et al. *CMAJ* 2005; Reichenbach S et al. *Arthritis Rheum* 2007; Divine JG et al. *Clin Orthop Relat Res* 2007; Bellamy N et al. *Cochrane Database Syst Rev* 2006].

However, data from patients at St. Anna Hospital have demonstrated potential efficacy of HA treatment in KOA. With this in mind, Prof. van der Weegen and colleagues conducted a randomized, double-blind, placebo-controlled trial to collect more information on the effectiveness and safety of HA injections in this patient population. The study aimed to determine whether HA injections would be more effective than placebo for knee pain and function in KOA.

Inclusion criteria included patients with a radiographic score of 1 to 3 based on the Kellgren and Lawrence grading scheme. Patients previously treated with HA were excluded.

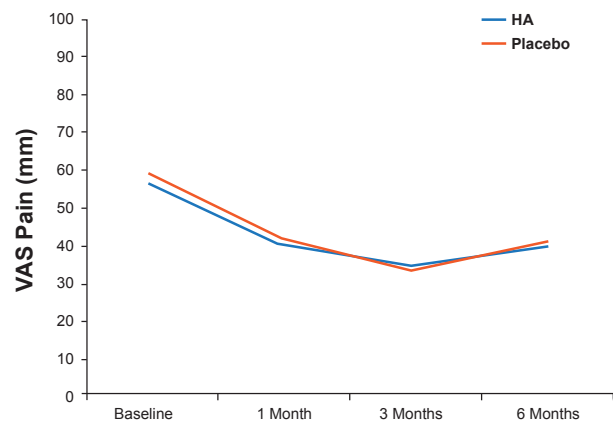
Patients (n=200) at two hospitals with mild to moderate KOA received either three intra-articular injections of HA (2 mL injections, 30 mg HA with a molecular weight of 2.2 M Dalton) or placebo at weekly intervals, with follow-up at 1, 3, and 6 months to assess visual analog scale (VAS) scores for pain, Western Ontario and McMaster Universities Arthritis (WOMAC) scores, knee range of motion, treatment satisfaction, and adverse events. Baseline details, including age, KOA severity, and pain scores were similar in both groups.

Although patients' pain scores improved significantly from baseline, there was no significant difference between the two groups (Figure 1). Additionally, there was no significant difference between groups at any of the follow-up time intervals in all other outcome measurements (VAS scores for pain, WOMAC scores, knee range of motion, and treatment satisfaction). No serious adverse events were reported in either of the treatment groups.

Similarly, although subgroup analyses on pretreatment duration of symptoms, pain severity, and radiological KOA severity were also performed, there were no significant differences between subgroups.

Although an earlier study using the same HA as used in this trial demonstrated clinical improvement from baseline [McDonald C et al. *J Clin Res* 2000], the results of this current study showed that three injections of HA were no more effective than placebo. Prof. Van der Weegen therefore concluded that HA treatment can not be recommended for patients with mild to moderate knee OA.

Figure 1. Visual Analog Scale Scores for Pain



Fermathron plus is the hyaluronic acid compound used in the study.
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Fewer Anterior Cruciate Ligament Reconstruction Failures With Autografts Versus Allografts

Written by Emma Hitt Nichols, PhD

Anterior cruciate ligament (ACL) reconstruction with hamstring autograft (AUTO) resulted in fewer reconstruction failures compared with tibialis posterior tendon allograft (ALLO) at 10 years. Craig R. Bottoni, MD, Honolulu, Hawaii, USA, presented data from a study that compared the long-term outcomes of autograft versus allograft ACL reconstruction.

Autografts are commonly used in ACL reconstruction, but allografts are becoming an increasingly popular alternative. However, the use of allografts has been associated with greater failure rates, particularly in young athletes, compared with autografts. Confounding variables include graft type, processing of the graft, and fixation method of the graft. The purpose of this study was to determine the long-term outcomes of primary ACL reconstruction using autograft or allograft.

In this prospective, randomized clinical trial, 99 patients (100 knees) with symptomatic ACL-deficient knee were randomly assigned to undergo ACL reconstruction with an AUTO or ALLO procedure. The allografts were from the same tissue bank and were aseptically processed and fresh frozen, and did not receive terminal irradiation. The method of graft fixation was identical in all cases, and patients participated in the same postoperative rehabilitation protocol, which was blinded to the physical therapists. Follow-up assessment was performed via telephone at a minimum of 10 years post surgery to determine functional and subjective status.



CLINICAL TRIAL HIGHLIGHTS

ACL rupture was confirmed by clinical exam and magnetic resonance imaging. Exclusion criteria included age <18 years, multiple ligament injuries, and previous knee ligament surgery in either knee. Patient demographics were similar among both study arms.

The failure rate of ACL reconstruction with AUTO was 8.5% compared with 26.5% in reconstructions performed with ALLO at 10-year follow-up. Failure was defined as a documented re-tear of the ACL. There was no significant difference in metrics between the surviving AUTOs and ALLOs. Six patients reported that their knee with the reconstructed ACL was unstable; however, following assessment by clinical exam and MRI, these grafts were found to be intact. Therefore, subjective instability was likely due to issues related to the meniscus, arthritis, or other reasons, rather than actual instability of the graft.

Dr. Bottoni highlighted that at a minimum of 10 years follow-up, 80% of patients that underwent ACL reconstruction maintained stability. However, he stated that the data from this study indicate that young, active patients who underwent an ACL reconstruction with ALLO had a 3-fold greater failure rate than those patients who underwent reconstruction with an AUTO. In addition, he noted that although the study was limited in that patients provided subjective data, there were objective measurements of graft wear.

Arthroscopic Latarjet for Shoulder Repair Provided Better Positioning, Less Pain

Written by Mary Mosley

Patients with chronic anterior instability of the shoulder that required bone grafting had significantly less pain and better bone block and equatorial positioning with an arthroscopic rather than a minimally invasive mini-open surgical approach for the Latarjet procedure in a prospective, nonrandomized, comparative study presented by Julien Deranlot, MD, Hôpitaux Universitaires Paris Ile-de-France Ouest, Paris, France.

The average Instability Severity Index Score (ISIS) was 4.4 at inclusion; an ISIS >3 was an inclusion criterion. The 36 patients in the arthroscopic and 22 patients in the mini-open groups had an average age of 26.9 years and 13 were women. Most (84.5%) of the patients were active in sports (67.2% recreationally). The treatment groups were comparable.

The primary outcome of patient-reported postoperative pain during Week 1 using the Visual Analog Score (VAS) of 0 to 10 was a mean 1.2±1.2 with arthroscopy compared with 2.5±1.4 with mini-open (p=0.0026). Further, the mean VAS

pain scores were significantly lower for Day 1 (2.1±1.3 vs 4.3±1.7; p=0.0001) through Day 4 (1±1.6 vs 2.3±1.8; p=0.001). Postoperative use of analgesics, by a standardized protocol that included paracetamol, tramadol, and naproxen, was similar (Table 1).

Table 1. Analgesic Consumption After Latarjet Shoulder Repair

	Mini-Open	Arthroscopic	p Value
Acetaminophen 500 mg	2.5±1.8	1.8±1.4	0.13
Tramadol 100 mg	0.2±0.4	0.7±1.2	0.07
Naproxen 75 mg	0.9±0.6	0.8±0.5	0.20

The arthroscopic approach took significantly more time (76.8±14 vs 61.6±13.2 minutes; p=0.0001). No perioperative complications occurred in either group, and the postoperative side effects of nausea, vomiting, anxiety, and vertigo were similar.

Radiography revealed significantly better bone block positioning at the anterior aspect of the glenoid with arthroscopy compared with the mini-open procedure, but no significant difference was seen with computed tomography (CT). On antero-posterior and lateral x-ray, the medio-lateral bone block positioning was 3.7±3.3 mm with arthroscopy versus 6.6±5.5 mm with mini-open (p=0.036), and the equatorial bone block positioning was better at 94.1% compared with 44.4%, respectively (p=0.002). On CT scan assessment, equatorial bone positioning was 40.9% with arthroscopy and 50% with the mini-open procedure at 4 hours, and bone block length was 20.6±2.8 and 21.4±2.1 mm, respectively.

The arthroscopic approach to the Latarjet procedure is more technically demanding, stated Prof. Deranlot, and to date there have been few comparisons between this approach and the mini-open surgical approach. This study shows that the arthroscopic procedure is reliable and reproducible and provides good bone positioning.

Application Order of Skin Antiseptics Does Not Affect Postsurgical Wound Infection

Written by Nicola Parry

Joshua Hunter, MD, University of Rochester Medical Center, Rochester, New York, USA, presented results from a prospectively randomized, single-blind study, demonstrating that the order in which isopropyl alcohol (IA) and chlorhexidine gluconate (CG) skin preparation solutions are applied does not affect wound infection rates in patients undergoing foot and ankle orthopedic surgery.

Surgical site infections are among the most common postoperative complications encountered by foot and