



Point/Counterpoint

**Guest Discussants: Thiru M. Annaswamy, MD, MA, FAAPMR, Erika V. Gosai, MD, David S. Jevsevar, MD, MBA
Feature Editor: Jaspal Ricky Singh, MD**

The Role of Intra-articular Hyaluronic Acid in Symptomatic Osteoarthritis of the Knee

CASE SCENARIO

A 62-year-old female nursing supervisor with a history of diabetes mellitus (hemoglobin A1C score: 7.8) presents to your office with a 5+-year history of right knee pain. She does not report any traumatic events or injuries and states that her right knee is progressively getting more painful with walking and especially when descending stairs. She has participated in both land-based and aquatic therapy in the past with limited improvement. She also reports that she received an ultrasound-guided intra-articular corticosteroid injection 8 weeks ago with tremendous improvement in her pain and function, but now the pain has returned. Examination reveals that she is obese, with a body mass index (BMI) of 34.5, and that she has moderate tenderness over the medial and lateral right knee joint lines. Her range of motion is normal with minimal swelling around the knee joint. Her right knee radiograph reveals Kellgren-Lawrence grade 3 osteoarthritis (OA). She has recently read the guidelines for treating knee OA put forth by the American Academy of Orthopaedic Surgeons (AAOS), in which viscosupplementation is no longer recommended. However, she has many family members and friends who received "Synvisc" in the past and experienced significant improvement in pain and function, and she would like to try this treatment option.

Drs Thiru Annaswamy and Erika Gosai will argue that, despite the new AAOS guidelines, viscosupplementation should be offered to the patient to treat the symptoms caused by knee degenerative joint disease. Dr David Jevsevar will argue that there is very little evidence that viscosupplementation is effective for knee OA and that either alternative conservative treatments or surgery should be recommended.

Thiru M. Annaswamy, MD, MA, FAAPMR, and Erika V. Gosai, MD, Respond

The question before us is how to best manage this patient's symptomatic knee OA given her medical and prior treatment history. Optimal nonoperative management of OA of the knee includes behavioral and lifestyle changes [1], which include weight loss, aerobic exercise, and a strengthening program. Patients who are clinically defined as obese (BMI >30) are 4 times more likely to have knee OA than are persons with a BMI <25. Every 5 kg of weight gain increases the risk of knee OA by 36% [2]. In addition, higher BMI levels in patients with OA are associated with increased pain and poorer self-reported and performance-based measures of function [3].

It would certainly be in the best interest of this patient to participate in an exercise and weight loss

program. For every pound of weight lost, she would experience a 4-fold reduction in the load exerted on the knee, per step. The loss of only 5% of body weight can provide some pain relief, and a 10% weight loss can provide significant pain reduction [2]. Furthermore, 18 months of aerobic exercise for 1 hour daily, 3 times weekly, can improve self-reported physical disability, knee pain, and performance on physical tasks by up to 12% [3]. Once an appropriate weight has been reached, 80 minutes of moderate exercise or 35 minutes of vigorous exercise per day is necessary to prevent weight gain [2]. However, the patient's current weight and stage of arthritis (Kellgren-Lawrence grade 3 OA) would likely prevent her from being able to participate in an exercise program vigorous enough to provide any

benefit. The Centers for Disease Control and Prevention [4] reported that "...adults with obesity and arthritis were 44% more likely to be physically inactive compared with persons with obesity but without arthritis." Thus, without further intervention to decrease her pain level again (after it was initially decreased by a corticosteroid injection), it is highly unlikely that this patient would be compliant with an exercise program.

Therefore, we need to focus on choosing the most effective pain-relieving treatment we can offer. Nonsteroidal anti-inflammatory drugs (NSAIDs) have long been the mainstay of arthritis treatment, but they come with inherent risks. NSAIDs are widely known to increase the risk of gastrointestinal toxicity and contribute to chronic kidney disease (CKD), and they are linked to vascular events including myocardial infarction, stroke, and cardiovascular mortality [5]. The American College of Rheumatology (ACR) recommends against the use of NSAIDs in patients with CKD stage IV or greater, and careful consideration of the risks and benefits for patients with CKD stage III [6]. Given the patient's obesity and diabetes, it is possible that she has some level of kidney disease. Therefore, NSAIDs should be used with caution in this patient.

Is this patient's only feasible next option, then, a total knee arthroplasty (TKA)? TKA typically is reserved for patients with refractory pain and disability. Prior to surgical intervention, patients typically have tried 3 or more conservative management options, including medications, intra-articular injections, and physical therapy [7]. It is likely that this patient has already failed to respond to other conservative treatments such as physical modalities and local agents or topical medications, given that she recently received an intra-articular corticosteroid injection. Intra-articular steroids can be effective for short-term relief, with improvement in pain that usually lasts 2-3 weeks [8]. However, repeating the corticosteroid injection only 8 weeks after her previous injection is not advisable. In this patient, who has a history of diabetes, another corticosteroid injection can result in elevated blood pressure and/or blood glucose levels, with effects lasting up to 7 days. In addition, there is a risk of a post-injection flare of pain within the first 24-48 hours as a result of a chemical synovitis from the corticosteroid crystalline deposits [8]. The Osteoarthritis Research Society International guidelines suggest that, with regard to intra-articular steroids, for longer durations of pain relief, clinicians should consider other treatment options [9]. Considering the aforementioned factors, at this point, a repeat corticosteroid injection is not advisable in this patient.

Therefore, to achieve effective pain control and better enable this patient to exercise, an intra-articular hyaluronic acid (IAHA) injection may be a suitable alternative, especially compared with both NSAIDs and a repeat intra-articular steroid injection. In a

meta-analysis of 5 trials comparing IAHA and NSAIDs, no statistically significant difference in change in pain scores from baseline to last follow-up was found. NSAIDs have a small positive, though modest, effect on pain. The effect of IAHA was found to be comparable to that of NSAIDs at 4 and 12 weeks, with an effect size of 0.2 [5]. Unlike NSAIDs, however, IAHA preparations are generally considered to be safe, with infrequent local reactions and a relative paucity of systemic adverse events [5]. The most common adverse reaction to IAHA is an inflammatory response at the injection site characterized by local swelling and pain and, rarely, pseudosepsis [8]. However, we need to adequately address the patient's valid concern of the AAOS guidelines that do not recommend the use of IAHA.

In 2013, AAOS released guidelines on the treatment of OA of the knee, in which Recommendation 9 stated, "cannot recommend using hyaluronic acid for patients with symptomatic osteoarthritis of the knee." It is important to note that this recommendation was based on their determination that IAHA lacked efficacy and was not based on safety concerns [10]. In the same guidelines, even though AAOS could not recommend for or against the use of intra-articular corticosteroids, they cited a study that found steroid injections to be inferior to IAHA injections [10]. Interestingly, guidelines other than those of AAOS have reached slightly different conclusions regarding the use of IAHA. The ACR guidelines could not make a recommendation regarding the use of IAHA in the initial management of knee OA [6]. The Osteoarthritis Research Society International guidelines concluded, with good quality of evidence, that the use of IAHA is uncertain in OA affecting only the knee and not appropriate in multiple-joint OA. The guidelines stated that IAHA has a small but significant efficacy in reducing pain by week 4, with a peak at week 8 (with moderate clinical significance) and residual benefits that lasted until 24 weeks. They further noted that whereas intra-articular steroids provided greater benefit for pain 2 weeks after injection, IAHA provided greater benefit at 12 and 26 weeks [9].

The conclusion of the AAOS guideline that IAHA should not be used was determined on the basis of the controversial use of minimum clinically important improvement (MCII) values. The use of this one metric to determine their recommendation fails to acknowledge multiple studies showing statistically and clinically significant improvements in symptoms after treatment. Although the MCII can be a useful tool, others have pointed out that "it should not be used as a cornerstone of clinical decision making" [11]. Individual clinical decisions need to be made using the concept called the "evidence-based triad" [12]. This concept provides a guide for deciding on the applicability of evidence to individual patients by seeking common ground in the triad of (1) clinical impression based on individual clinical expertise, (2) best available external evidence,

Download English Version:

<https://daneshyari.com/en/article/2712060>

Download Persian Version:

<https://daneshyari.com/article/2712060>

[Daneshyari.com](https://daneshyari.com)