



from the

DRUG DESK

A Drug Information Update from the B.C. Drug and Poison Information Centre

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Patient has a prescription for Synvisc[®], but it is very expensive. They are looking for a cheaper alternative. Are Orthovisc[®] and/or Durolane[®] considered interchangeable with Synvisc[®]?

Osteoarthritis (OA) is a chronic condition that involves loss of articular cartilage combined with new bone formation at the joint, which results in pain and deformation.¹ Oral analgesics such as NSAIDs and acetaminophen are first-line therapy for pain related to OA.²

Hyaluronic acid (HA), a component of synovial fluid, is a polysaccharide made of repeating disaccharide units of glucuronic acid and N-acetylglucosamine.³ In OA, concentration and molecular weight of HA is reduced.⁴ This reduces the ability of the joint to adapt to stress and shear forces. Synvisc[®] is composed of hyaluronan derivatives and is used as a synovial fluid substitute in OA.²

In addition, HA derivatives are thought to exert anti-inflammatory, anabolic, and analgesic effects. They have demonstrated greater efficacy than placebo and similar efficacy to NSAIDs in the relief of OA pain.^{1,3} According to a Cochrane Systematic Review, intra-articular HA derivatives are superior to placebo in reducing OA pain and may have a longer lasting effect on pain and function compared to intra-articular corticosteroids.¹

Synvisc[®] is unique in that it contains HA derivatives of a high molecular weight that are covalently cross-linked.³ It is considered more like endogenous HA than other products.⁵ This modification is believed to extend the half-life of the substance in the joint space as well as increase its viscoelastic properties.³ Synvisc[®], however, is the only HA derivative that has been linked to rare reports of pseudosepsis, a severe acute inflammatory condition that typically occurs within 3 days of injection.

The lower molecular weight (MW) products (those other than Synvisc®) could theoretically be especially advantageous because the lower MW could result in a greater concentration in the joint, leading to more interaction with synovial cells and thus, less inflammation.⁵ However, clinical studies have not demonstrated an advantage of low MW over high MW products. One manufacturer-funded study of 406 OA patients found that an intermediate MW product resulted in a larger decrease in WOMAC pain score at 6 months (mean change of -22.9 vs -18.4) than a lower MW product.⁶ The clinical significance of this difference was not discussed. Another similar study of 80 patients, that was not industry funded, found no significant difference between the two formulations on the WOMAC and VAS score at any time within a year of treatment.⁷

In terms of cost, Synvisc® appears to be the most expensive per syringe followed by, in descending cost order: Orthovisc®, Ostenil®, Euflexxa®, Durolane®, Neovisc®.⁸ Differences in cost may be offset by the number of injections required per cycle (Orthovisc® requires 3-4 while Synvisc® requires 1 or 3, Euflexxa® requires 1 or 3, Neovisc® 1-5, Ostenil® requires 3, Durolane® requires 1).^{4,8-10} Single-dose formulations are more expensive than doses for the 3-dose regimens.

Recommendation:

Due to lack of head-to-head comparisons, it is unclear whether Synvisc® provides a clinically important advantage over other viscosupplements. All HA derivative products appear to have the same mechanism, therefore, a trial of a less expensive product such as Durolane® or Orthovisc® appears to be a reasonable option.

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References available upon request.