

EVIDENCE-BASED QUICKNOTES

Viscosupplementation for Knee OA

Is viscosupplementation recommended for symptomatic relief of knee osteoarthritis?

To answer this question, we performed a comprehensive search of the PubMed database (November 2012) for papers that addressed this specific research question.

Due to volume of literature on this topic, search was restricted to only meta-analyses (1-3) and professional society recommendations (4) published in most recent 3 yrs (2010-2012). Systematic review from Cochrane Library updated in 2009 was not included; however, its findings are represented in recommendations of the professional society (4).

Colen et al identified 18 trials (1180 patients in published reports up to 2011) comparing intra-articular hyaluronic acid (HA) injection with saline injection, and reported significant, but likely not clinically important, reduction in pain with HA at 3 mos (1). An unexplained “placebo effect” showed 30% improvement in pain with saline injection (1). In meta-analysis including 71 trials (9617 patients in published and unpublished reports up to 2012), Rutjes et al concluded that viscosupplementation

(VS) provided clinically irrelevant effect on knee pain and function (2). Significant increase in serious and local adverse events was shown with VS but cause for this increase was unclear (2). Bannuru et al conducted meta-analysis of 49 trials (6962 patients in published and unpublished reports up to 2010), and reported significant overall effect on pain with HA compared to placebo (3). Pain reduction was evident by 4 wks, peaking at 8 wks, and decreasing again by 24 wks (3). Authors reported that effect at all time points was above or close to “clinically meaningful” threshold (3). Limitation of these reviews was high level of between-trial heterogeneity (1).

Osteoarthritis Research Society International (OARSI) concluded there was moderate effect of HA on pain and function, but also reported high degree of between-trial heterogeneity and publication bias (4). When analysis was restricted to only high-quality studies, effect of HA on pain was minimal (4).

Although improved pain has been shown with VS, it is not clear whether improvements are clinically meaningful. Balance, neuromuscular, and aerobic exercise remain as recommended conservative approach to management of knee OA.

Check with the provider of this newsletter to learn more about exercises appropriate for this condition.

1. Colen S, van den Bekerom MP, Mulier M, Haverkamp D. Hyaluronic acid in the treatment of knee osteoarthritis: a systematic review and meta-analysis with emphasis on the efficacy of different products. *BioDrugs*. 2012 Aug 1;26(4):257-68. doi: 10.2165/11632580-000000000-00000. PubMed PMID: 22734561.
2. Rutjes AW, Jüni P, da Costa BR, Trelle S, Nuesch E, Reichenbach S. Viscosupplementation for osteoarthritis of the knee: a systematic review and meta-analysis. *Ann Intern Med*. 2012 Aug 7;157(3):180-91. doi: 10.7326/0003-4819-157-3-201208070-00473. Review. PubMed PMID: 22868835.
3. Bannuru RR, Natov NS, Dasi UR, Schmid CH, McAlindon TE. Therapeutic trajectory following intra-articular hyaluronic acid injection in knee osteoarthritis--meta-analysis. *Osteoarthritis Cartilage*. 2011 Jun;19(6):611-9. Epub 2011 Apr 9. Review. PubMed PMID: 21443958.
4. Zhang W, Nuki G, Moskowitz RW, Abramson S, Altman RD, Arden NK, Bierma-Zeinstra S, Brandt KD, Croft P, Doherty M, Dougados M, Hochberg M, Hunter DJ, Kwoh K, Lohmander LS, Tugwell P. OARSI recommendations for the management of hip and knee osteoarthritis: part III: Changes in evidence following systematic cumulative update of research published through January 2009. *Osteoarthritis Cartilage*. 2010 Apr;18(4):476-99. Epub 2010 Feb 11. Review. PubMed PMID: 20170770.