

The treatment of knee osteoarthritis: a review of current evidence-based medicine

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There is confusing information in the literature concerning the efficacy of different types of non-operative and surgical treatments for osteoarthritis (OA) of the knee. This editorial has revised the evidence-based medicine on the management of OA of the knee. To get this goal the most important systematic reviews and randomized clinical trials published in the English literature have been revised.

Regarding non-operative treatment with analgesics and anti-inflammatory drugs Kivitz, *et al.* did not find statistically significant differences in effectiveness and tolerability between cyclooxygenase-2 (COX-2) selective inhibitors and non-selective NSAIDs in patients with OA knee pain¹. Treatment with celecoxib 200 mg once daily and diclofenac 50 mg twice daily demonstrated comparable efficacy in relieving the signs and symptoms of OA². Lumiracoxib 100 mg once daily is effective and well tolerated when treating OA pain of the knee for periods of up to 1 year, making it a useful option for the long-term treatment of OA pain³. Advice to use either oral or topical preparations has an equivalent effect on knee pain, but oral NSAIDs appear to produce more minor adverse effects than topical NSAIDs⁴. Older people with knee pain must be advised to use topical rather than oral NSAIDs. Wu, *et al.*⁵ reported that glucosamine hydrochloride (GH) is ineffective for pain reduction in patients with knee OA. Glucosamine sulphate (GS) showed no pain-reduction benefits after 6 months of therapy.

Concerning intra-articular injections of hyaluronic acid (HA) Colen, *et al.*⁶ reported that HA improves pain by approximately 40-50% compared with baseline levels. Comparing the different HA products, which vary in the molecular weight, concentration, and volume of HA, they were not able to conclude that one brand has a better efficacy than another due to the heterogeneity of the studies and outcomes. Rutjes, *et al.*⁷ showed that in patients with knee OA, viscosupplementation is associated with a small and clinically irrelevant benefit.

Regarding rehabilitation and physiotherapy, Wang, *et al.*⁸ reported that in patients with knee pain secondary to OA aerobic and aquatic exercise improve disability, and that aerobic exercise, strengthening exercise, and ultrasounds reduce pain and improve function. According to Davis and Mackay⁹ exercise remains a mainstay of conservative management although most studies report only short-term outcomes. Penny, *et al.*¹⁰ reported that there is limited evidence to support the prescription of lateral wedge insole (LWI) to people with medial compartment knee OA to reduce pain and increase function. A meta-analysis published by Parkes, *et al.*¹¹ did not support the use of lateral wedges for knee OA. Lauche, *et al.*¹² have reported that Tai Chi is at least short-term effective and safe it might be preliminarily recommended as an adjuvant treatment for patients with OA of the knee.

Concerning surgical treatment by means of arthroscopic debridement, the meta-analysis reported by Spahn, *et al.*¹³ demonstrated that arthroscopic joint debridement is a potential and sufficient treatment for knee OA in a middle-term time interval. This procedure resulted in an excellent or good outcome in approximately 60% of patients in approximately 5 years. When comparing high tibial osteotomy (HTO) and unicompartmental knee arthroplasty (UKA), Spahn, *et al.*¹⁴ found HTO to be more appropriate for younger patients who accept a slight decrease in their physical activity. Medial UKA is appropriate for older patients obtaining sufficient pain relief but with reduced physical activity. Fu, *et al.*¹⁵ showed that UKA yielded significantly better results compared to HTO in terms of function results, however, no difference in specific knee score was observed; HTO got slightly better results of the range of motion. Postoperative rate of revision and complications did not differ significantly between two groups. With the correct patient selection, both HTO and UKA show effective and reliable results. Regarding the controversy UKA versus total knee arthroplasty (TKA), Koskinen, *et al.*¹⁶ found that

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UKA had a 60% survival rate and TKA an 80% survival rate at 15 years with any revision taken as the endpoint. Overall survival of UKA was worse than that of TKA. In the cost-benefit analysis, the cost saved by lower implant prices and shorter hospital stay with UKA did not cover the costs of the extra revisions. UKA had significantly poorer long-term survival than TKA. Based on these results, Koskinen, *et al.*¹⁶ could not recommend widespread use of UKA in treatment of unicompartmental OA of the knee.

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