

EDITORIAL

What does the “Cochrane Database of Systematic Reviews” Say with Regard to the Surgical Management of Knee Osteoarthritis?

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The Cochrane Library (named after Archie Cochrane) is a compilation of databases in medicine and other healthcare specialties established by Cochrane and other organizations. Its central goal is the compilation of Cochrane Reviews, a database of systematic reviews and meta-analyses that concentrate and describe the results of medical research studies. The Cochrane Library constantly informs us of controlled and well-conducted research. For this reason, it is a fundamental source of so-called evidence-based medicine.

The aim of this Editorial is to analyze current information on the surgical management of knee osteoarthritis given by the Cochrane database of systematic reviews (CDBSR).

In this Editorial, I have reviewed the systematic reviews reported in the Cochrane Library dated December 6, 2018 utilizing the keywords “knee osteoarthritis”. A total of 54 systematic reviews were found, of which only 6 were directly focused on the surgical management of osteoarthritis of the knee joint. Therefore, only the 6 that analyzed the surgical management of osteoarthritis of the knee joint were reviewed for this article.

Below I will show in chronological order the principal information and results of the 6 systematic reviews.

Arthroscopic debridement has no benefit for knee osteoarthritis (23 January, 2008)

Laupattarakasem et al published, with a high level of evidence, that arthroscopic debridement does not provide benefits in knee osteoarthritis (1). In their study, 3 randomized controlled trials (RCTs) were evaluated (271 patients). They evaluated three comparative trials. One trial compared arthroscopic debridement with washing and with sham surgery. No significant differences were encountered. When sham surgery was compared with placebo, poorer results were

found at 2 weeks in patients undergoing arthroscopic debridement, with no significant difference at 2 years. The second trial compared arthroscopic debridement and arthroscopic lavage, finding that at 5 years, the arthroscopic debridement significantly lowered knee pain compared with washing. The third trial, which compared arthroscopic debridement with closed needle washing, observed no significant differences.

Joint lavage has no benefit for knee osteoarthritis (12 May 2010)

Reichenbach et al. reported that joint washing does not produce relevant benefits for people with knee osteoarthritis in terms of pain alleviation or improvements in function (2). Seven studies (567 patients) were included. Three studies analyzed arthroscopic lavage, two trials studied non-arthroscopic lavage and two studied abundant irrigation. Reichenbach et al found little evidence that joint lavage was beneficial in terms of pain alleviation at 3 months. The amelioration in joint function at 3 months was analogous.

In primary total knee arthroplasty (TKA), at 2-year follow-up, cemented tibial components displace more than uncemented ones (with or without hydroxyapatite); nevertheless, cemented prostheses have a higher risk of aseptic loosening than uncemented prostheses (17 October 2012)

In publications with a 2-year follow-up of people with osteoarthritis and rheumatoid arthritis operated on from primary TKA, Nakama et al found less displacement of cemented tibial components than among those without cement (3); nevertheless, cemented fixation had a higher risk of aseptic loosening than those with uncemented fixation. This study included five RCTs (297 participants).

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In primary TKA, no significant differences were encountered between preserving or eliminating the posterior cruciate ligament (PCL) – 11 October 2013

Verra et al analyzed 17 RCTs (with 1810 patients and 2206 knees), comparing designs with PCL retention with posterior stabilized (PS) designs, in which the PCL is sacrificed (4). No differences were observed between PCL-preserving and PCL-sacrificing TKAs with respect to knee range of motion (ROM), degree of pain, and clinical outcomes. However, in the PCL- sacrificing group the ROM was 2.4° greater and the mean functional Knee Society Score (KSS) was 2.3 points higher; nonetheless, from the clinical point of view these differences were not important.

Valgus high tibial osteotomy (HTO) lowers pain and ameliorates knee function in patients with medial compartmental knee osteoarthritis (13 December 2014)

Brouwer et al found that valgus HTO diminishes pain and ameliorates function of the knee in people with medial unicompartmental osteoarthritis (5). No evidence suggested differences between the various known osteotomy techniques. No evidence showed whether the valgus HTO was more efficacious than the unicompartmental knee arthroplasty (UKA) or than the non-surgical treatment. Twenty-one studies (1065 patients) were included. Two studies compared valgus HTO and UKA. After a mean follow-up of 7.5 years pain and function scores and treatment failure rates were similar. The valgus HTO group had more complications than the UKA group, although the differences were not statistically significant.

In PCL-retaining prostheses, no significant differences were observed between mobile-bearing designs and fixed-bearing designs (level of evidence moderate to low) – 4 February 2015

Hofstede et al. found evidence of moderate to low quality that suggested that with regard to articular pain, clinical and functional results, health-related quality of life, revision surgery, fatality, reoperation percentage and other severe complications, the results were similar between mobile-bearing prostheses and fixed-bearing prostheses in PCL TKA (6). Hofstede et al analyzed 19 studies with 1641 patients (2247 knees), 98.5% with osteoarthritis and 1.5% with rheumatoid arthritis.

In spite of the hard work done by the authors of the systematic reviews reported by the CDBSR, numerous unresolved responses are left regarding the surgical treatment of knee osteoarthritis (1–6). There are not enough good quality publications in the current literature that can provide clear answers to many questions.

Orthopedic surgeons dedicated to the surgical management of osteoarthritis of the knee joint should follow the recommendations of the CDBSR, given they are based on the scientific evidence known to date. In addition, before publishing our results, we should design our studies such that the results will have sufficient evidence to be useful to other authors without experience in the field.

In conclusion, the CDBSR disheartens joint lavage and arthroscopic debridement, establishes the usefulness of valgus HTO in people with osteoarthritis of the medial compartment of the knee joint, and indicates that in primary TKA the diverse prosthetic designs known so far give analogous outcomes.

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