



Background

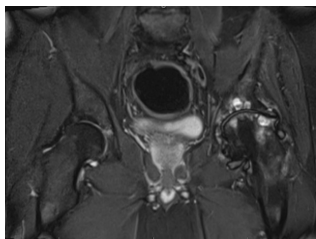
Osteoarthritis (OA) is a highly prevalent and degenerative disorder seen in primary care that causes pain, disability, and loss of function. In 2022, the prevalence of arthritis in adults age 18 and older was 18.9%, with women (21.5%) more likely to have arthritis than men (16.1%).¹ With aging populations and increasing rates of obesity, the prevalence of osteoarthritis is expected to continue to increase globally.

Clinical Question

What are evidence based effective modalities for the management of osteoarthritis in patients who are not surgical candidates?

Case

62-year-old male with schizoaffective disorder, tobacco dependence, obesity, hypertension and pre-diabetes found to have severe left hip osteoarthritis and experiencing severe pain which significantly impacted his mobility and functionality.



Discussion

Symptoms of OA tend to progress over time but can be mediated in the short term with a combination of lifestyle, medical and/or complementary therapy in patients with moderate to severe osteoarthritis who are not ideal surgical candidates.

Treatment

Lifestyle

- Aquatic exercise has small short-term benefits for OA.²
- Vitamin D supplements, antioxidant supplements, shoes specifically designed for persons with OA, and ionized wrist bracelets are ineffective for OA.³⁻⁸
- Exercise, tai chi, knee taping, and physical therapy are beneficial for knee OA and can be recommended based on patient preference and acceptability
- Lateral wedge insoles are ineffective for medial knee OA.⁹⁻¹³
- Knee bracing has insufficient evidence to draw conclusions about its effectiveness.¹⁴
- Physical therapy was not beneficial for hip OA in a well-designed trial.¹⁵
- Weight loss has been recommended for patients with knee and hip OA¹⁶ ; however, a systematic review found only low-quality evidence that bariatric surgery reduces pain and improves function in morbidly obese persons with knee pain.¹⁷
- Ginger consumption significantly reduced pain and disability in five studies (N = 593) included in a systematic review. However, patients were more likely to stop taking it, and the overall quality of studies was moderate.¹⁸ Similarly, avocado unsaponifiables may be effective at dosages of 300 to 600 mg per day. Both of these interventions, although likely safe, are limited by the small number and methodologic flaws of studies.¹⁹

Medical

- Acetaminophen is less effective than nonsteroidal anti-inflammatory drugs (NSAIDs) for OA, but given its safety, a trial at an adequate dosage is appropriate.^{20, 21}
- Of the NSAIDs currently available in the United States, diclofenac, 150 mg per day, is most likely to be effective for OA, followed by naproxen, according to a systematic review.²⁰ A Cochrane review concluded that topical diclofenac and ketoprofen are moderately effective.²²
- Topical capsaicin appeared to be somewhat effective in several small trials, although it is associated with a transient burning sensation.²³⁻²⁶
- Tramadol is moderately effective for OA, according to a systematic review of 11 randomized trials (N = 1,019), and has a number needed to treat (NNT) of 6 for one person to report at least moderate improvement.²⁷ Conversely, the number needed to harm (NNH) for one person to stop taking tramadol because of adverse effects is 8.
- Duloxetine (Cymbalta) is a serotonin-norepinephrine reuptake inhibitor approved for treatment of painful conditions.^{28,29} Its NNT is 7 for clinically significant pain reduction in OA. The most common adverse effect is mild to moderate nausea (23% vs. 7% for placebo; NNH = 6).³⁰
- Because tramadol and duloxetine have harms and adverse effects similar in magnitude to their potential benefits, they should be used only in select patients.
- Oral and transdermal opioids (not including tramadol) have only modest benefits that are of questionable clinical significance, according to a Cochrane review.³¹ These medications also have significant adverse effects, and long-term use is discouraged. Patients taking opioids should be closely monitored, and the dose should be kept as low as possible. Daily dosages of more than 50 mg of hydrocodone or 30 mg of oxycodone are discouraged.³²
- **In general, it is reasonable to begin treatment with full-dose acetaminophen and/or topical therapy and progress to an NSAID such as naproxen or diclofenac, then, if necessary, to tramadol or duloxetine.**
- Corticosteroid injections improve function and provide short-term pain relief, but do not improve overall quality of life, according to systematic reviews.^{33,34} A recent large randomized trial found no benefit and greater cartilage loss in patients receiving corticosteroid injections.³⁵
- Hyaluronic acid injections are not effective for OA, according to a review of the highest-quality studies and unpublished research.³⁶⁻³⁸
- Dextrose prolotherapy injections showed a modest benefit for knee OA in two small randomized trials, but the evidence base is limited, and the technique may be operator-dependent and not easily reproduced.^{39,40}
- Platelet-rich plasma or bone marrow aspirate concentrate injections are not effective for OA.^{41,42}

Complementary

- Acupuncture is at best minimally effective for OA of the knee or hip.⁴³⁻⁴⁵
- Oral glucosamine with or without chondroitin does not appear to be effective in well-designed trials.⁴⁶⁻⁴⁸
- S-adenosylmethionine and methylsulfonylmethane have uncertain effectiveness based on systematic reviews. Observed benefits were small in magnitude and probably not clinically significant.^{49,50}