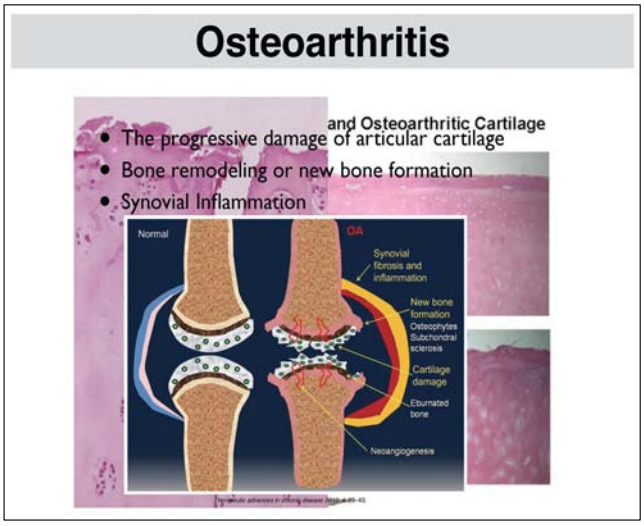
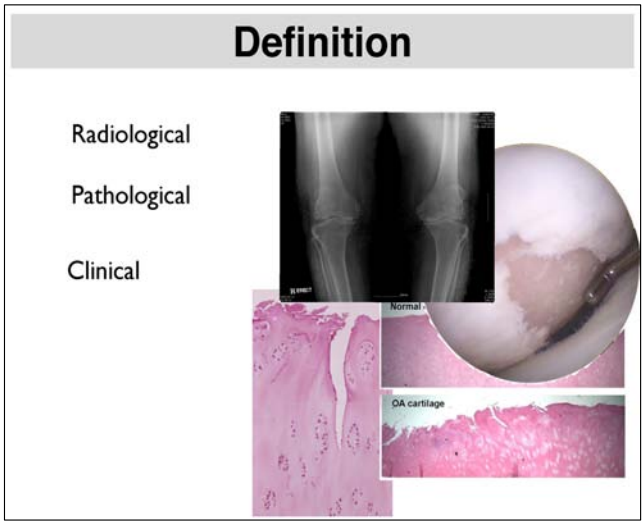
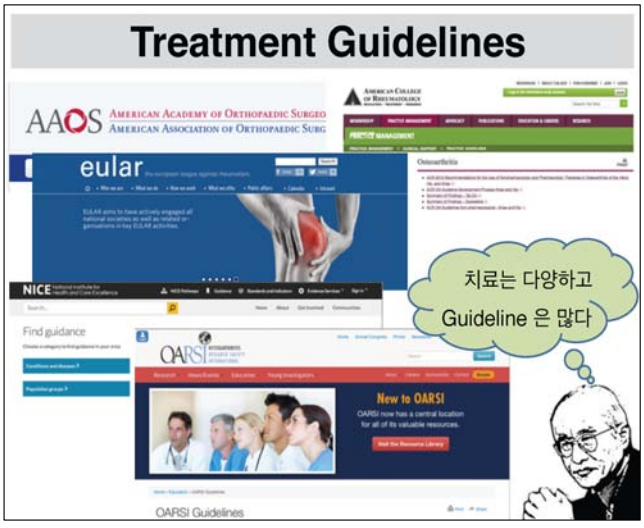
증례를 통해 본 골관절염의 치료 가이드라인

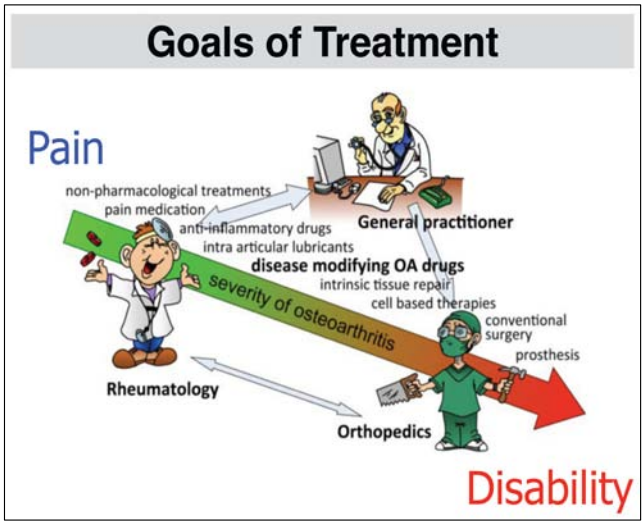
동아대학교 의과대학 내과학교실

이 성 원

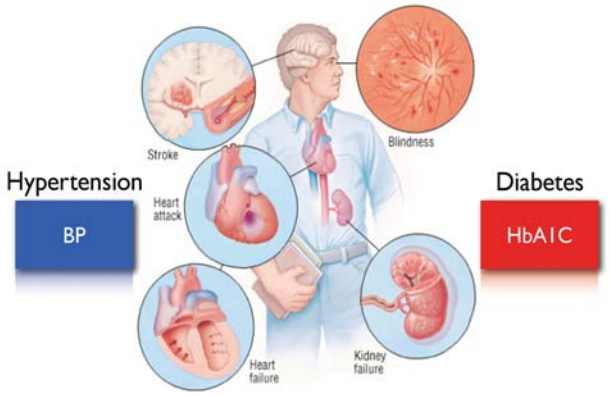




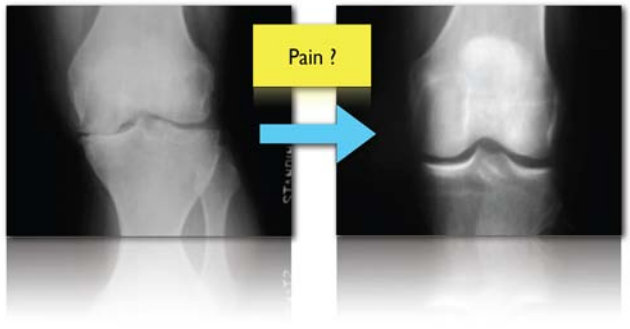




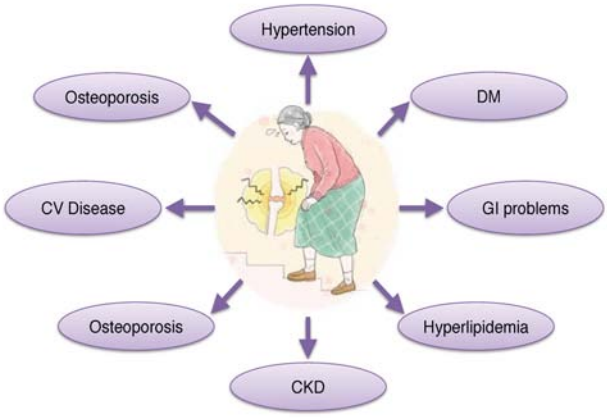
Targeted Therapy



Targeted Pain

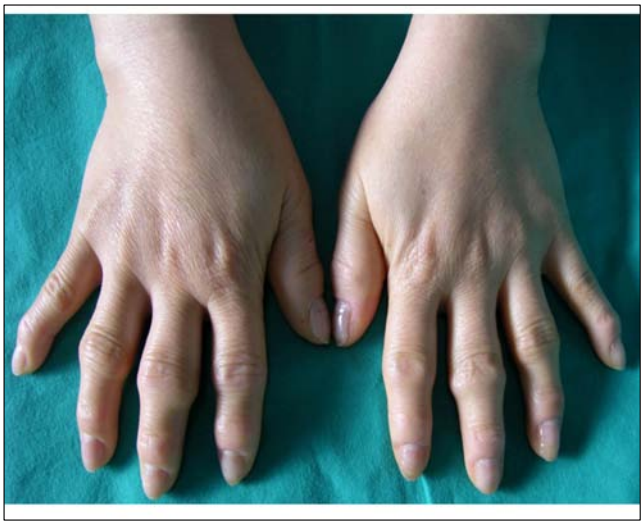


Cormobidities



증례 - 병력

- 여자 65세
- CC: 1년 전부터 서서히 발생한 양측 손의 통증
  - 기상 시 관절의 뻣뻣함이 있음
  - 양측 손가락 PIP, DIP 통증과 발적
- PHx: N-S
- Lab
  - CBC 8,500-10.8-470k - ESR 52 mm/hr
  - CRP 0.5 mg/dL - HBs Ag/Ab (+)/(-)
  - ALT/AST 26/32 IU/L - UA 4.6 mg/dL
  - RF 56.1 IU/mL



2010 ACR/EULAR New Classification Criteria for RA

JOINT DISTRIBUTION (0-5)	
1 large joint	0
2-10 large joints	1
1-3 small joints (large joints not counted)	2
4-10 small joints (large joints not counted)	3
>10 joints (at least one small joint)	5
SEROLOGY (0-3)	
Negative RF AND negative ACPA	0
Low positive RF OR low positive ACPA	2
High positive RF OR high positive ACPA	3
SYMPTOM DURATION (0-1)	
<6 weeks	0
≥6 weeks	1
ACUTE PHASE REACTANTS (0-1)	
Normal CRP AND normal ESR	0
Abnormal CRP OR abnormal ESR	1

≥6 = definite RA

What if the score is <6?

Patient might fulfill the criteria…

→ **Prospectively** over time (cumulatively)

→ **Retrospectively** if data on all four domains have been adequately recorded in the past

ACR 2012 Recommendations

Table 2. Pharmacologic recommendations for the initial management of hand OA*

We conditionally recommend that health professionals should use one or more of the following:
- Topical capsaicin
- Topical NSAIDs, including trolamine salicylate
- Oral NSAIDs, including COX-2 selective inhibitors
- Tramadol

We conditionally recommend that health professionals should not use the following:
- Intraarticular therapies
- Opioid analgesics

We conditionally recommend that persons age ≥75 years should use topical rather than oral NSAIDs. In persons age <75 years, the TEP expressed no preference for using topical rather than oral NSAIDs.

* No strong recommendations were made for the pharmacologic management of hand osteoarthritis (OA). For patients who have an inadequate response to initial pharmacologic management, please see the Results for alternative strategies. NSAIDs = nonsteroidal antiinflammatory drugs; COX-2 = cyclooxygenase 2; TEP = Technical Expert Panel.

Erosive and/or inflammatory IP OA

the TEP conditionally
- recommends not using either oral MTX or SSZ
- voted not to provide a recommendation either for or against the use of HCQ

Arthritis Care & Research Vol. 64, No. 4, April 2012, pp 465–474

EULAR Recommendations of Hand OA

Table 2 Experts' propositions developed through three Delphi rounds—order according to topic (general, non-pharmacological, pharmacological, invasive, and surgical)

No	Proposition	SOR (95% CI) VAS100	A-B (%)
1	Optimal management of hand OA requires a combination of non-pharmacological and pharmacological treatment modalities individualised to the patient's requirements	95 (92 to 98)	100
2	Treatment of hand OA should be individualised according to localisation of OA; risk factors (age, sex, adverse metabolical factors); type of OA (nodal, erosive, traumatic); presence of inflammation; severity of structural change; level of pain, disability and restriction of quality of life; comorbidity and co-medication (including OA at other sites); and the wishes and expectations of the patient	84 (76 to 92)	92
3	Education concerning joint protection (how to avoid adverse mechanical factors) together with an exercise regimen (involving both range of motion and strengthening exercises) are recommended for all patients with hand OA	59 (45 to 74)	38
4	Local application of heat (for example, paraffin wax, hot pack), especially before exercise, and ultrasound are beneficial treatments Overall Heat Ultrasound	56 (40 to 71) 77 (69 to 85) 25 (15 to 36)	33 77 0
5	Splints for thumb base OA and orthoses to prevent/correct lateral angulation and flexion deformity are recommended	67 (57 to 77)	69
6	Local treatments are preferred over systemic treatments, especially for mild to moderate pain and when only a few joints are affected. Topical NSAIDs and capsaicin are effective and safe treatments for hand OA	75 (68 to 83)	86
7	Because of its efficacy and safety paracetamol (up to 4 g/day) is the oral analgesic of first choice and, if successful, is the preferred long term oral analgesic	87 (78 to 96)	92
8	Oral NSAIDs should be used at the lowest effective dose and for the shortest duration in patients who respond inadequately to paracetamol. The patient's requirements and response to treatment should be re-evaluated periodically. In patients with increased gastrointestinal risk, non-selective NSAIDs plus a gastroprotective agent, or a selective COX-2 inhibitor (coxib) should be used. In patients with increased cardiovascular risk, coxibs are contraindicated and non-selective NSAIDs should be used with caution	81 (74 to 88)	100
9	SYSADOA (for example, glucosamine, chondroitin sulphate, avocado soybean unsaponifiables, diacerhein, intra-articular hyaluronan) may give symptomatic benefit with low toxicity, but effect sizes are small, suitable patients are not defined and clinically relevant structure modification, and pharmacoeconomic benefits have not been established	63 (48 to 76)	69
10	Intra-articular injection of long-acting corticosteroid is effective for painful flares of OA, especially trapeziometacarpal joint OA	60 (47 to 74)	46
11	Surgery (for example, interposition arthroplasty, osteotomy or arthrodesis) is an effective treatment for severe thumb base OA and should be considered in patients with marked pain and/or disability when conservative treatments have failed	68 (56 to 79)	62

SOR, strength of recommendation; VAS, visual analogue scale; OA, osteoarthritis; NSAIDs, non-steroidal anti-inflammatory drugs; SYSADOAs, symptomatic slow acting drugs for osteoarthritis.

Ann Rheum Dis 2007;66:377-388

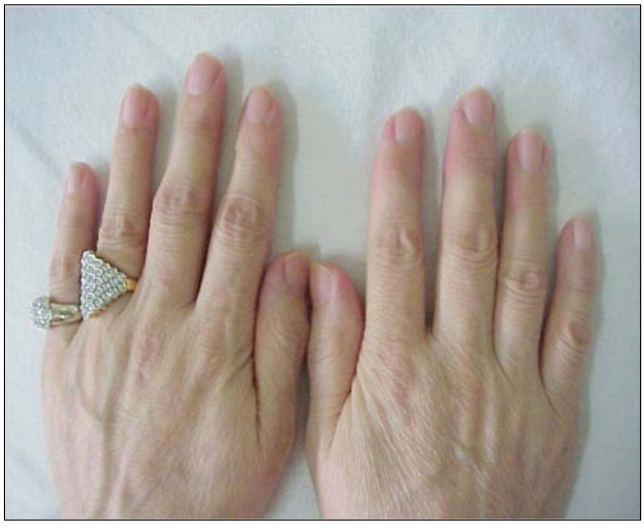
Prescriptions

- First
  - ACTP: 1.3 g/day
  - Increasing dose: 2.6 g/day

Because of its efficacy and safety paracetamol (up to 4 g/day) is the oral analgesic of first choice and, if successful, is the preferred long term oral analgesic — 87 (78 to 96) — 92

- Change
  - ACTP: 650 mg/day+ Tramdol: 75 mg/day
- Add
  - NSAIDs

Oral NSAIDs should be used at the lowest effective dose and for the shortest duration in patients who respond inadequately to paracetamol. The patient's requirements and response to treatment should be re-evaluated periodically. In patients with increased gastrointestinal risk, non-selective NSAIDs plus a gastroprotective agent, or a selective COX-2 inhibitor (coxib) should be used. In patients with increased cardiovascular risk, coxibs are contraindicated and non-selective NSAIDs should be used with caution — 81 (74 to 88) — 100



SYSADOA

- SYSADOA (SYmptomatic Slow Acting Drug for OA)
  - Glucosamine
  - Chodroitin sulfate
  - Diacerine
  - avocado soybean unsaponifiales
  - IA hyaluronan
- EULAR Recommendations
  - Symptomatic benefit with low toxicity
  - Effect size is small
  - No defined suitable Pts
  - No defined clinically relevant structure modification
  - No established phamarcoeconomic benefits

A randomized, double-blind, placebo-controlled trial of low-dose oral prednisolone for treating painful hand

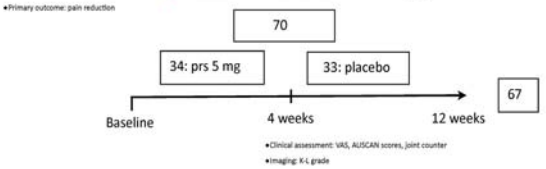


Table 2 Change from baseline at 4 and 12 weeks, adjusted for baseline values, with associated ANCOVA results

Variable	4 weeks: Placebo (n = 35)	4 weeks: PNL (n = 35)	4 weeks: P-value	12 weeks: Placebo (n = 33)	12 weeks: PNL (n = 34)	12 weeks: P-value
Pain VAS 2 weeks	−16 (−22, −9)	−17 (−24, −11)	F = 0.09 P = 0.77	−8 (−16, 1)	−8 (−16, 0)	F = 0.01 P = 0.94
Pain VAS 48 h	−17 (−24, −10)	−20 (−27, −13)	F = 0.38 P = 0.54	−13 (−22, −4)	−10 (−19, −1)	F = 0.27 P = 0.61
Pain VAS joint	−16 (−23, −9)	−22 (−29, −15)	F = 1.74 P = 0.19	−8 (−17, 2)	−10 (−19, 0)*	F = 0.08 P = 0.78
Patient disease activity VAS	−15 (−22, −8)	−20 (−27, −12)	F = 0.74 P = 0.39	−3 (−12, 6)	−6 (−15, 3)	F = 0.27 P = 0.60
Physician disease activity VAS	−11 (−18, −5)	−16 (−22, −9)	F = 0.78 P = 0.38	−4 (−11, 3)	−8 (−15, −1)	F = 0.63 P = 0.43
AUSCAN pain VAS	−12 (−18, −6)	−18 (−24, −12)	F = 1.62 P = 0.21	−2 (−8, 6)	−6 (−14, 1)	F = 0.89 P = 0.35
AUSCAN stiffness VAS	−9 (−17, −1)	−13 (−21, −5)	F = 0.55 P = 0.46	0 (−9, 9)	0 (−9, 9)*	F = 0.00 P = 0.95
AUSCAN function VAS	−8 (−14, −2)	−10 (−16, −4)	F = 0.24 P = 0.61	0 (−7, 6)	−2 (−8, 5)	F = 0.06 P = 0.82

Data are given as mean change in variable (95% CI), mm.
*n = 33, †n = 31.

Conclusion: This is the first randomized controlled trial of low-dose corticosteroid alone for painful hand OA, which demonstrated that short-term low-dose oral PNL is not an effective analgesic treatment for hand OA.

Rheumatology, 2012, 51(12), 2286–2294.

Hydroxychloroquine

Table 1 Systematic review of hydroxychloroquine use in osteoarthritis

Reference	n	Site	Treatment	Outcome
[23]	8	Erosive hand OA unresponsive to NSAIDs	200 mg HCQ	6/8 noted improvement in pain, reduced synovitis and reduced morning stiffness
				Response time 7/52 to 7/12. No adverse effects
[24]	15	Hand OA	Placebo-controlled HCQ	Improvement in clinical symptoms at 12 months (Ritchie index)
[25]	7	Erosive hand OA	200 to 400 mg HCG	Improvement in 7/7 patients noted
[26]	15	Hand and knee OA	HCQ 6/12	13/15 patients achieved good therapeutic response after 6 months
[27]	29	Knee OA	400 mg HCQ 4/12, placebo-controlled	No difference in WOMAC pain ($P = 0.551$), stiffness ($P = 0.512$) or function ($P = 0.293$); no difference on VAS ($P = 0.461$) or Lequesne ($P = 0.803$) scales
[28]	88	Nodal OA of the hands	HCQ 200 mg/bid, ACM 1.3 gm/tid or placebo 6/12	No significant difference between hydroxychloroquine, acetaminophen or placebo in mean number of tender joints at 24 weeks
[29]	8	Erosive or inflammatory OA	HCQ 200 to 400 mg	Clinical improvement in 5/8 patients, 3 patients discontinued (1 due to unresponsiveness, 2 due to side-effects)
[30]				Intra-articular chloroquine in RA and OA of knee joint
				No abstract available

ACM, acetaminophen; HCQ, hydroxychloroquine; MeSH, medical subject headings; VAS, visual analogue scale; WOMAC, Western Ontario and McMaster Universities Index of OA.

Kingsbury et al. Trials 2013, 14:64

Hydroxychloroquine effectiveness in reducing symptoms of hand osteoarthritis (HERO): study protocol for a randomized

Sarah R Kingsbury[1], Puvan Tharmanathan[2], Joy Adamson[2], Nigel K Arden[3], Fraser Birrell[4], Sarah Cockayne[2], John Dickson[2], Michael Doherty[5], Krysia S Dziedzic[6], Andrew Grainger[7], Catherine E Hewitt[2], Terence W O'Neill[8], David I. Scott[9], Tonia L. Vincent[10], Richard J Wakefield[11], Fiona E Watt[12], David J Torgerson[2] and Philip G Conaghan[1*]

Abstract

Background: Osteoarthritis (OA) is the most common type of arthritis, causing significant joint pain and disability. It is already a major cause of healthcare expenditure and its incidence will further increase with the ageing population. Current treatments for OA have major limitations and new analgesic treatments are needed. Synovitis is prevalent in OA and is associated with pain. Hydroxychloroquine is used in routine practice for treating synovitis in inflammatory arthritides, such as rheumatoid arthritis. We propose that treating patients with symptomatic hand OA with hydroxychloroquine will be a practical and safe treatment to reduce synovitis and pain.

Methods/design: HERO is an investigator-initiated, multicentre, randomized, double-blind, placebo-controlled trial. A total of 252 subjects with symptomatic hand OA will be recruited across primary and secondary care sites in the UK and randomized on a 1:1 basis to active treatment or placebo for 12 months. Daily medication dose will range from 200 to 400 mg according to ideal body weight. The primary endpoint is change in average hand pain during the previous two weeks (measured on a numerical rating scale (NRS)) between baseline and six months. Secondary endpoints include other self-reported pain, function and quality-of-life measures and radiographic structural change at 12 months. A health economics analysis will also be performed. An ultrasound substudy will be conducted to examine baseline levels of synovitis. Linear and logistic regression will be used to compare changes between groups using univariable and multivariable modelling analyses. All analyses will be conducted on an intention-to -treat basis.

Discussion: The HERO trial is designed to examine whether hydroxychloroquine is an effective analgesic treatment for OA and whether it provides any long-term structural benefit. The ultrasound substudy will address whether baseline synovitis is a predictor of therapeutic response. This will potentially provide a new treatment for OA, which could be of particular use in the primary care setting.

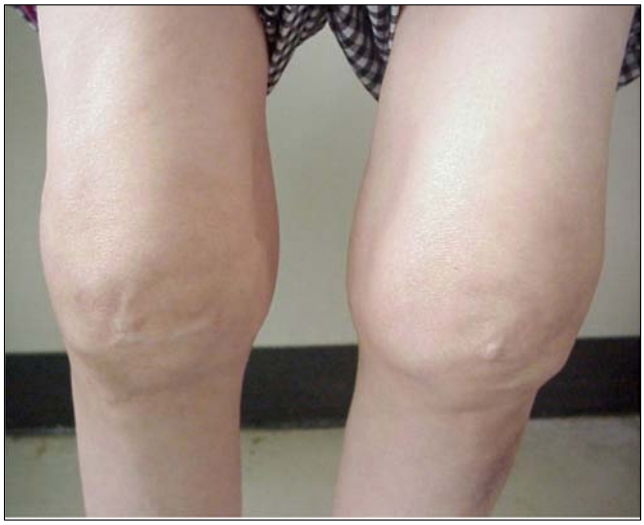
Trial registration: ISRCTN91859104.

Keywords: Double-blind, Hand osteoarthritis, Hydroxychloroquine, Placebo-controlled, Randomized

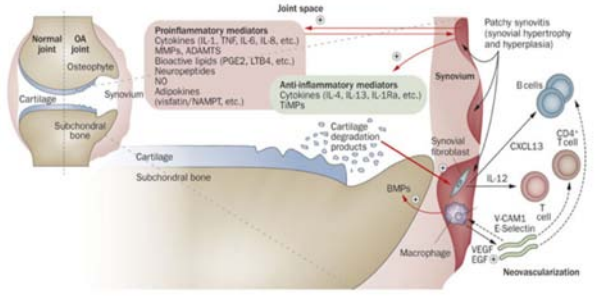
Kingsbury et al. Trials 2013, 14:64

증례 - 병력

- 여자 76세
- CC: 수년 전부터 진행한 무릎통증과 부종
- PHx: DM, HT
- PEx:
  - BP: 160/90 mmHg
  - HbA1C: 7.6%
- Lab
  - CBC 10,100-11.2-420k - ESR 36 mm/hr
  - CRP 0.5 mg/dL - AST/ALT 26/32 IU/L



Joint Effusion of OA



Nature Reviews Rheumatology **6**, 625-635 (November 2010)

ACR 2012 Recommendations

Table 4. Pharmacologic recommendations for the initial management of knee OA*

We conditionally recommend that patients with knee OA should use one of the following:

- Acetaminophen
- Oral NSAIDs
- Topical NSAIDs
- Tramadol
- Intraarticular corticosteroid injections

We conditionally recommend that patients with knee OA should not use the following:

- Chondroitin sulfate
- Glucosamine
- Topical capsaicin

We have no recommendations regarding the use of

- intraarticular hyaluronates, duloxetine, and opioid analgesics

* No strong recommendations were made for the initial pharmacologic management of knee osteoarthritis (OA). For patients who have an inadequate response to initial pharmacologic management, please see the Results for alternative strategies. NSAIDs = nonsteroidal antiinflammatory drugs.

age >75 years, the TEP strongly

•recommends the use of topical rather than oral NSAIDs

Hx of GI complication
•COX-2 or Non-selective NSAID + PPI
•COX-2 + PPI (GI complication < 1yrs)

Low dose aspirin
•Non-selective NSAID except ibuprofen
•COX-2 should not be used for CV protection

CKD
•CKD VI or V: contra Ix
•CKD III : risk benefit ratio

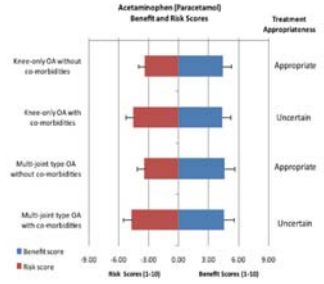
Unwilling TKR or contraIx
•Opioid recommendation by APS/AAPM

Acupuncture or TENS
•Unwilling or contraIX of TKR from mod to severe pts

Arthritis Care & Research Vol. 64, No. 4, April 2012, pp 465–474

Acetaminophen

OARSI 2014 Recommendations



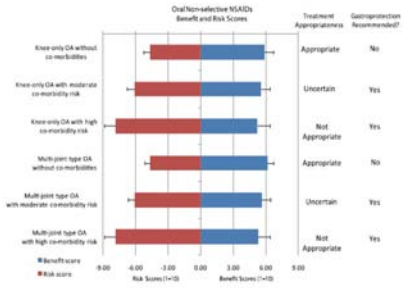
AAOS RECOMMENDATION 7B

We are unable to recommend for or against the use of acetaminophen, opioids, or pain patches for patients with symptomatic osteoarthritis of the knee.
Strength of Recommendation: Inconclusive

Osteoarthritis & Cart 2014; 22: 363-388

NSAIDs (oral non-selective)

OARSI 2014 Recommendations



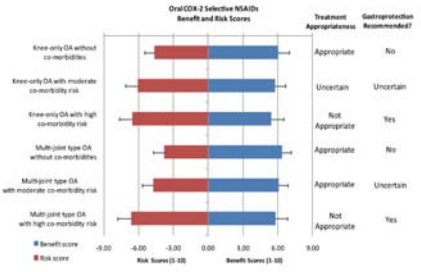
AAOS RECOMMENDATION 7A

We recommend nonsteroidal anti-inflammatory drugs (NSAIDs; oral or topical) or Tramadol for patients with symptomatic osteoarthritis of the knee.
Strength of Recommendation: Strong

Osteoarthritis & Cart 2014; 22: 363-388

NSAIDs (oral COX-2 inhibitors)

OARSI 2014 Recommendations



AAOS RECOMMENDATION 7A

We recommend nonsteroidal anti-inflammatory drugs (NSAIDs; oral or topical) or Tramadol for patients with symptomatic osteoarthritis of the knee.
Strength of Recommendation: Strong

Osteoarthritis & Cart 2014; 22: 363-388

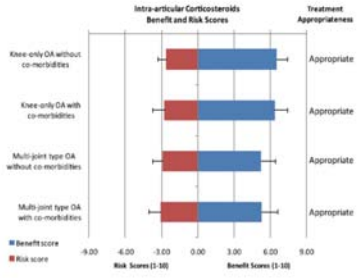
Prescriptions

- First
  - Aspiration & IA steroid
  - ACTP: 1.3 g/day ~ 2.6 g/day
- Change
  - ACTP: 1.3 g/day+ Tramdol: 150 mg/day
- Add
  - NSAIDs
  - Duloxetin

Oral NSAIDs should be used at the lowest effective dose and for the shortest duration in patients who respond inadequately to paracetamol. The patient's requirements and response to treatment should be re-evaluated periodically. In patients with increased gastrointestinal risk, non-selective NSAIDs plus a gastroprotective agent, or a selective COX-2 inhibitor (coxib) should be used. In patients with increased cardiovascular risk, coxibs are contraindicated and non-selective NSAIDs should be used with caution — 81 (74 to 88) — 100

IA corticosteroid

OARSI 2014 Recommendation



Appropriate

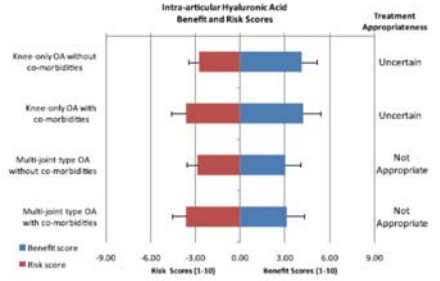
AAOS RECOMMENDATION 8

We are unable to recommend for or against the use of intraarticular (IA) corticosteroids for patients with symptomatic osteoarthritis of the knee.
Strength of Recommendation: Inconclusive

Osteoarthritis & Cart 2014; 22: 363-388

IA Hyaluronic Acid

OARSI 2014 Recommendation

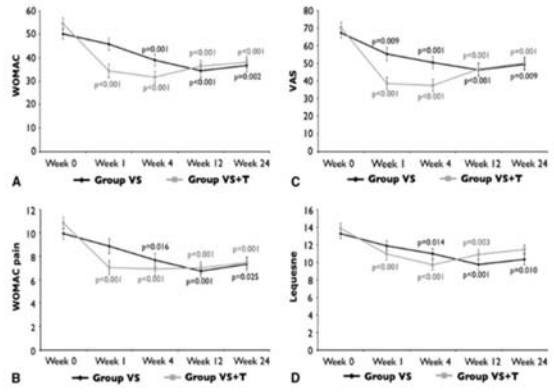


AAOS RECOMMENDATION 9

We cannot recommend using hyaluronic acid for patients with symptomatic osteoarthritis of the knee.
Strength of Recommendation: Strong

Osteoarthritis & Cart 2014; 22: 363-388

Adding Triamcinolone Improves Viscosupplementation: A Randomized Clinical Trial



The Journal of the Canadian Rheumatology Association, 2013; 47(2), 613–620.

PRP intra-articular knee injections for the treatment of degenerative cartilage lesions and osteoarthritis

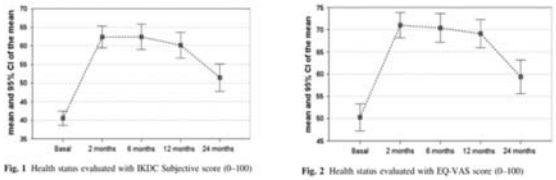
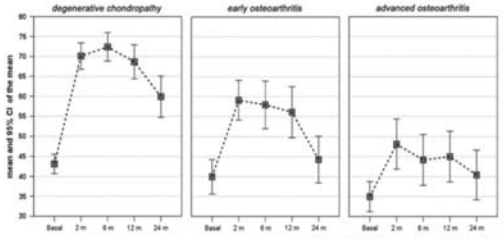


Fig. 1 Health status evaluated with IKDC Subjective score (0–100)

Fig. 2 Health status evaluated with EQ-VAS score (0–100)



Knee Surgery, Sports Traumatology, Arthroscopy 2010; 19(4), 528–535.

Glucosamine ± Chondroitin

GAIT study

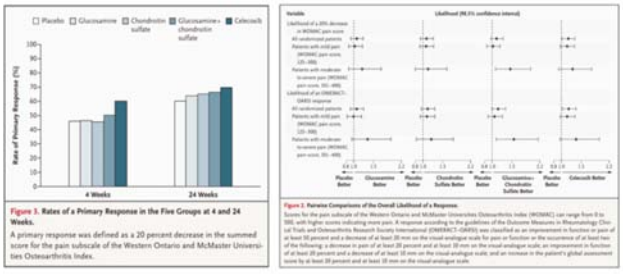


Figure 3. Rates of a Primary Response in the Five Groups at 4 and 24 Weeks.

A primary response was defined as a 20 percent decrease in the summed score for the pain subscale of the Western Ontario and McMaster Universities Osteoarthritis Index.

Figure 4. Pairwise Comparisons of the Overall Likelihood of a Response.

Scores for the pain subscale of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) can range from 0 to 500, with higher scores indicating more pain. A response according to the guidelines of the Outcome Measures in Rheumatology Clinical Trials and Osteoarthritis Research Society International (OMERACT–OARSI) was classified as an improvement in function or pain of at least 50 percent and a decrease of at least 20 mm on the visual-analogue scale for pain or function or the occurrence of at least two of the following: a decrease in pain of at least 20 percent and at least 20 mm on the visual-analogue scale, an improvement in function of at least 20 percent and a decrease of at least 10 mm on the visual-analogue scale, and an increase in the patient's global assessment score by at least 20 percent and at least 10 mm on the visual-analogue scale.

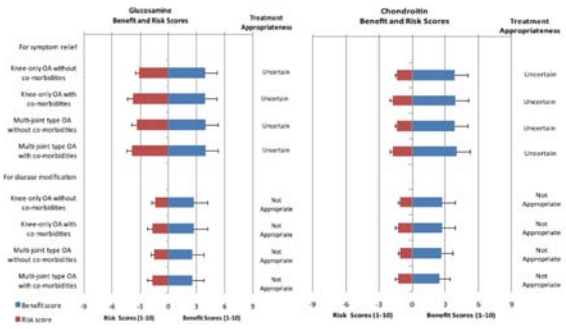
AAOS RECOMMENDATION 6

We cannot recommend using glucosamine and chondroitin for patients with symptomatic osteoarthritis of the knee.
Strength of Recommendation: Strong

NEJM 2006; 8: 354

Glucosamine ± Chondroitin

OARSI 2014 Recommendations



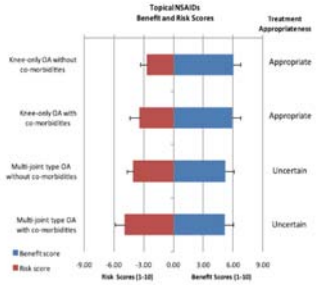
For symptom relief: Uncertain

For disease modification; Not appropriate

Osteoarthritis & Cart 2014; 22: 363-388

NSAIDs (topical)

OARSI 2014 Recommendations



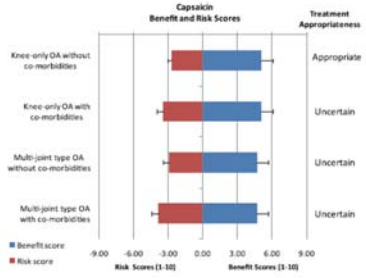
AAOS RECOMMENDATION 7A

We recommend nonsteroidal anti-inflammatory drugs (NSAIDs; oral or topical) or Tramadol for patients with symptomatic osteoarthritis of the knee.
Strength of Recommendation: Strong

Osteoarthritis & Cart 2014; 22: 363-388

Capsacin

OARSI 2014 Recommendations



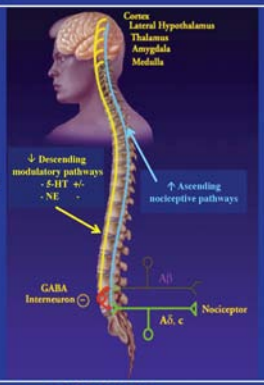
Recommendation:

Appropriate: knee-only OA without relevant co-morbidities
Uncertain: multi-joint OA and individuals with relevant comorbidities

Osteoarthritis & Cart 2014; 22: 363-388

Role of Serotonin & Norepinephrine in Chronic Pain

- Pain perception via
  - Ascending nociceptive pathways [1]
  - Descending modulatory pathways [2]
- 5-HT and NE: both key modulatory neurotransmitters in descending inhibitory pathways [2,3,4]
  - Part of body's endogenous analgesic system
- Potentiation of 5-HT and NE activity in the CNS is believed to result in pain inhibition [3,4]



1. Iyengaret el. J Pharmacol Exp Ther 2004;311(2):576-85 2. Woolf CJ. *Ann Intern Med* 2004;140:441-451.; 3.Richardson BP. *Ann NY Acad Sci* 1990;600:511-519. 4. Data from Marieb et al. In: Human Anatomy & Physiology 2007

A Double-blind, Randomized, Placebo-controlled Study of the Efficacy and Safety of Duloxetine for the Treatment of Chronic Pain Due to Osteoarthritis of the Knee

FDA approved

Pain inventory

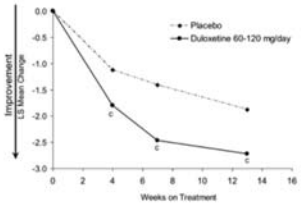


Figure 2. Changes in the Brief Pain Inventory 24-hour average pain (primary efficacy measure) in patients with chronic pain due to osteoarthritis of the knee treated with duloxetine 60 mg to 120 mg once daily or placebo for 13 weeks (mixed-effects model repeated measures). LS, least squares. $^{c}P \leq 0.001$ duloxetine vs. placebo.

Pain Scores

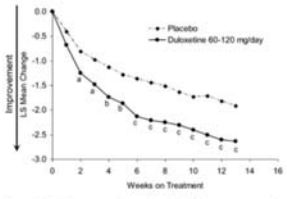
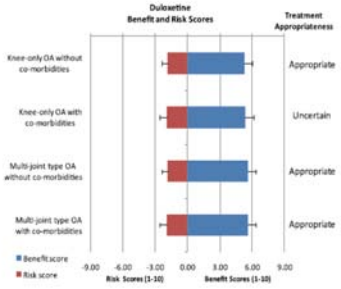


Figure 4. Weekly mean changes in the 24-hour average pain scores from patient diary in patients with chronic pain due to osteoarthritis of the knee treated with duloxetine 60 mg to 120 mg once daily (QD) or placebo for 13 weeks (mixed-effects model repeated measures). Patients received duloxetine 30 mg QD during the first week. LS, least squares. $^{a}P \leq 0.05$; $^{b}P \leq 0.01$; $^{c}P \leq 0.001$ duloxetine vs. placebo.

Pain Practice. 2011; *11*(1), 33–41.

Duloxetine

OARSI 2014 Recommendations



Recommendation:

Appropriate: individuals without co-morbidities

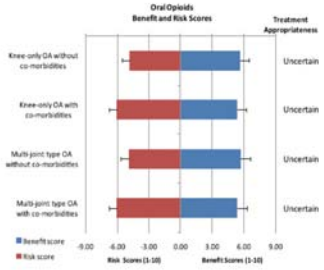
Appropriate: individuals with multiple-joint OA and relevant co-morbidities

Uncertain: knee-only OA with relevant co-morbidities

Osteoarthritis & Cart 2014; 22: 363-388

Opiods (oral)

OARSI 2014 Recommendations



AAOS RECOMMENDATION 7B

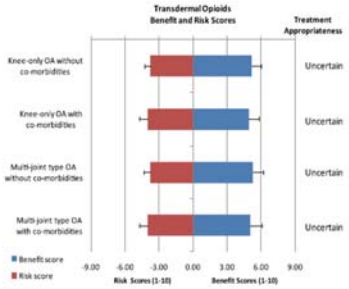
We are unable to recommend for or against the use of acetaminophen, opioids, or pain patches for patients with symptomatic osteoarthritis of the knee.

Strength of Recommendation: Inconclusive

Osteoarthritis & Cart 2014; 22: 363-388

Opiods (Trandermal)

OARSI 2014 Recommendations



AAOS RECOMMENDATION 7B

We are unable to recommend for or against the use of acetaminophen, opioids, or pain patches for patients with symptomatic osteoarthritis of the knee.

Strength of Recommendation: Inconclusive

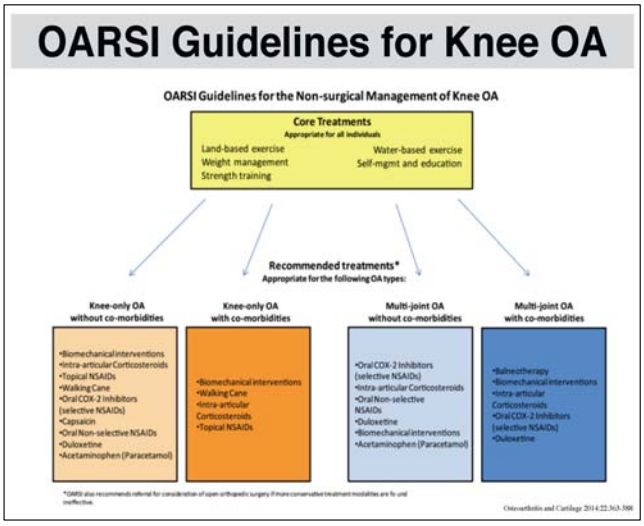
Osteoarthritis & Cart 2014; 22: 363-388

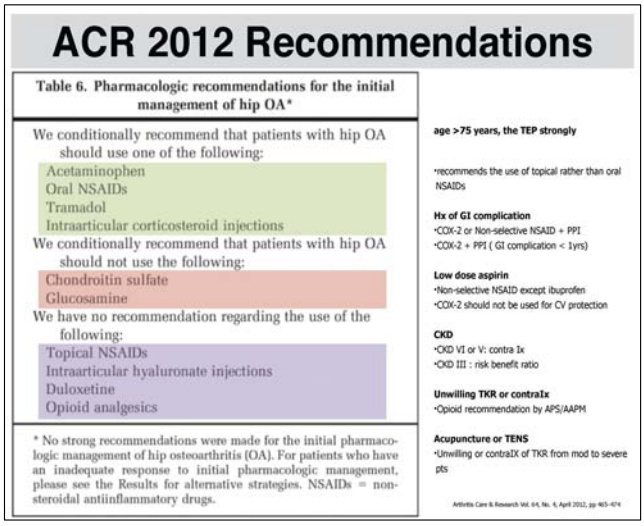
Recommendation for Opioid

American Pain Society/American Academy of Pain Medicine

1. patient selection and risk stratification
2. informed consent and opioid management plans
3. initiation and titration of chronic opioid therapy
4. monitoring of patients on chronic opioid therapy, including dose escalations, high- dose opioid therapy, opioid rotation, and indications for discontinuation of therapy
5. prevention and management of opioid-related adverse effects
6. management of breakthrough pain.

Arthritis Care & Research Vol. 64, No. 4, April 2012, pp 465–474


OARSI Guidelines for Knee OA
OARSI Guidelines for the Non-surgical Management of Knee OA
Core Treatments
Appropriate for all individuals
Land-based exercise
Weight management
Strength training
Water-based exercise
Self-mgmt and education
Recommended treatments*
Appropriate for the following OA types:
Knee-only OA without co-morbidities
•Biomechanical interventions
•Intra-articular Corticosteroids
•Topical NSAIDs
•Walking Cane
•Oral COX-2 Inhibitors (selective NSAIDs)
•Capsaicin
•Oral Non-selective NSAIDs
•Duloxetine
•Acetaminophen (Paracetamol)
Knee-only OA with co-morbidities
•Biomechanical interventions
•Walking Cane
•Intra-articular Corticosteroids
•Topical NSAIDs
Multi-joint OA without co-morbidities
•Oral COX-2 Inhibitors (selective NSAIDs)
•Intra-articular Corticosteroids
•Oral Non-selective NSAIDs
•Duloxetine
•Biomechanical interventions
•Acetaminophen (Paracetamol)
Multi-joint OA with co-morbidities
•Balneotherapy
•Biomechanical interventions
•Intra-articular Corticosteroids
•Oral COX-2 Inhibitors (selective NSAIDs)
•Duloxetine
*OARSI also recommends referral for consideration of open orthopedic surgery if more conservative treatment modalities are fo und ineffective.
Osteoarthritis and Cartilage 2014;22:363-388


ACR 2012 Recommendations
Table 6. Pharmacologic recommendations for the initial management of hip OA*
We conditionally recommend that patients with hip OA should use one of the following:
Acetaminophen
Oral NSAIDs
Tramadol
Intraarticular corticosteroid injections
We conditionally recommend that patients with hip OA should not use the following:
Chondroitin sulfate
Glucosamine
We have no recommendation regarding the use of the following:
Topical NSAIDs
Intraarticular hyaluronate injections
Duloxetine
Opioid analgesics
* No strong recommendations were made for the initial pharmacologic management of hip osteoarthritis (OA). For patients who have an inadequate response to initial pharmacologic management, please see the Results for alternative strategies. NSAIDs = nonsteroidal antiinflammatory drugs.
age >75 years, the TEP strongly
•recommends the use of topical rather than oral NSAIDs
Hx of GI complication
•COX-2 or Non-selective NSAID + PPI
•COX-2 + PPI (GI complication < 1yrs)
Low dose aspirin
•Non-selective NSAID except ibuprofen
•COX-2 should not be used for CV protection
CKD
•CKD VI or V: contra Ix
•CKD III : risk benefit ratio
Unwilling TKR or contraIx
•Opioid recommendation by APS/AAPM
Acupuncture or TENS
•Unwilling or contraIX of TKR from mod to severe pts
Arthritis Care & Research Vol. 64, No. 4, April 2012, pp 465-474