L'arthrose en 2024: de l'épidémiologie à la pratique quotidienne

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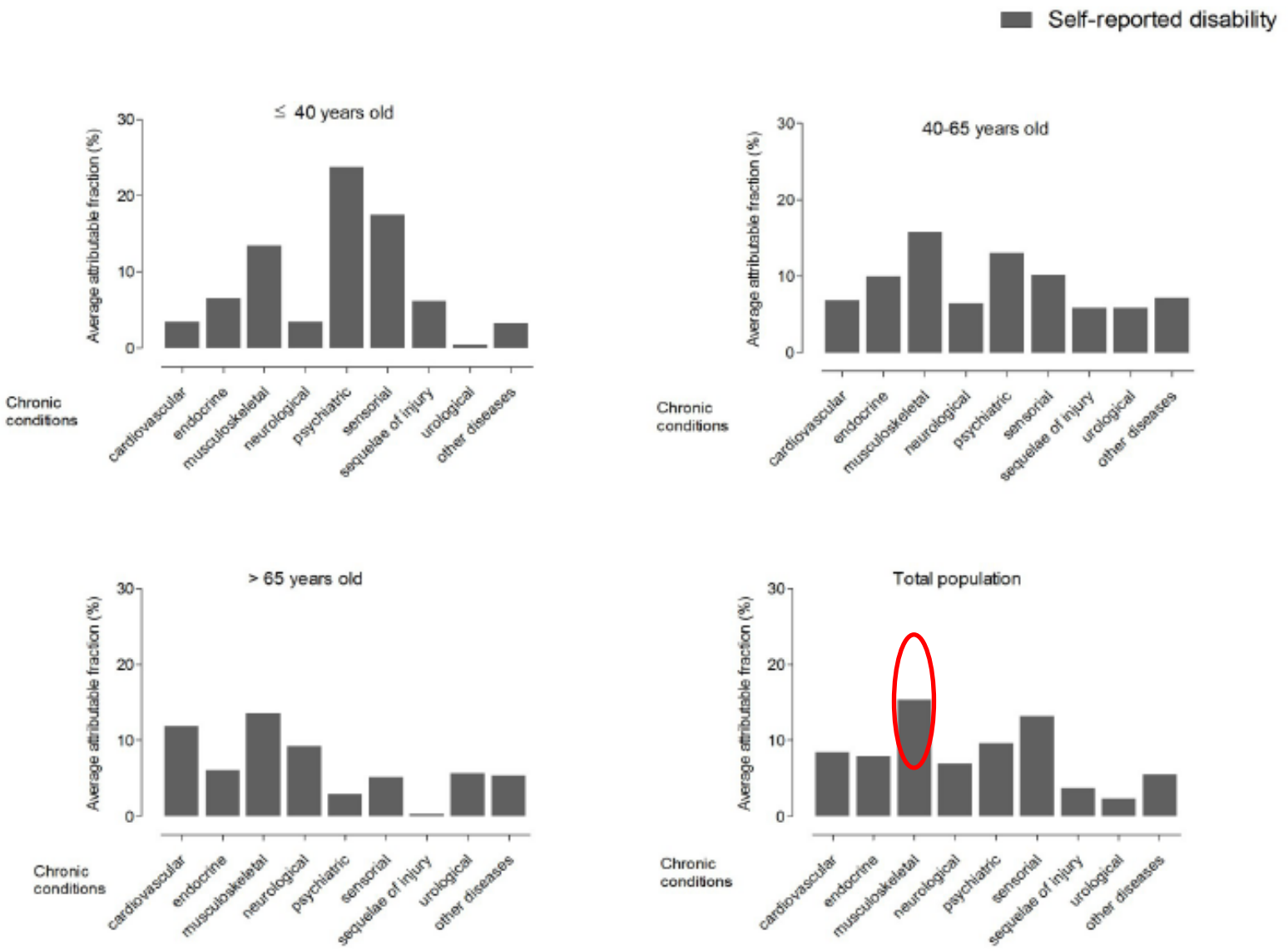
L’incapacité fonctionnelle de la population française



Palazzo et al, PLoS ONE, 2012

PLOS ONE

The Burden of Musculoskeletal Conditions

Clémence Palazzo[1,2,3,4]*, Jean-François Ravaud[5,6,7], Agathe Papelard[4,5], Philippe Ravaud[1,2,3], Serge Poiraudeau[1,3,4,5]

1 U1153, Institut National de la Santé et de la Recherche Médicale, Paris, France, **2** Centre d'Épidémiologie Clinique, Hôpital Hôtel Dieu AP-HP, Paris, France, **3** Université Paris Descartes, PRES Sorbonne Paris Cité, Paris, France, **4** Service de rééducation et réadaptation de l'appareil locomoteur et des pathologies du rachis, Hôpital Cochin AP-HP, Paris, France, **5** Institut fédératif de recherche sur le handicap, Institut National de la Santé et de la Recherche Médicale, Paris, France, **6** U988, Institut National de la Santé et de la Recherche Médicale, Villejuif, France, **7** UMR 8211, Centre national de la recherche scientifique, Villejuif, France

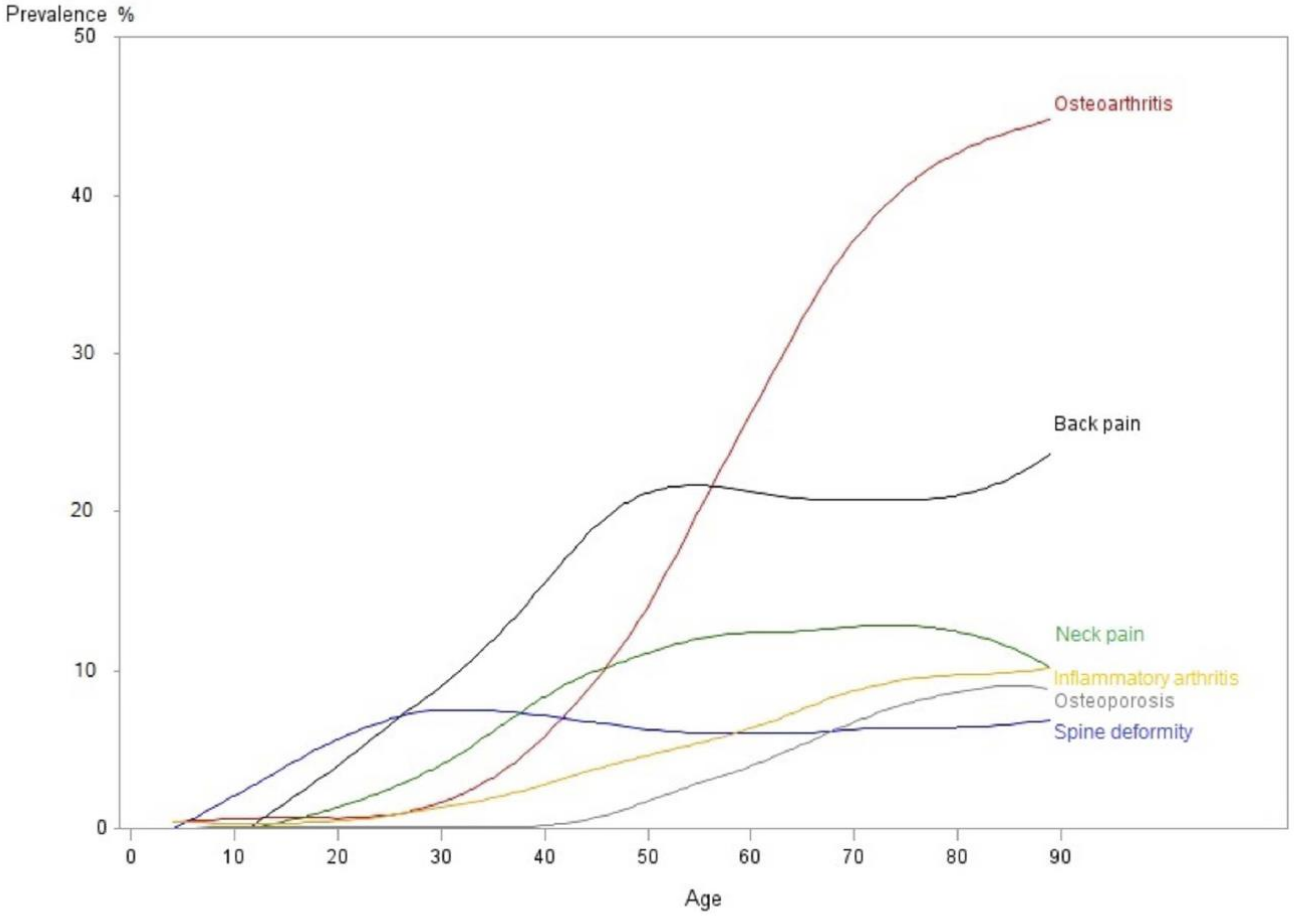


Figure 2. Prevalence of RMDs in France by age.
doi:10.1371/journal.pone.0090633.g002

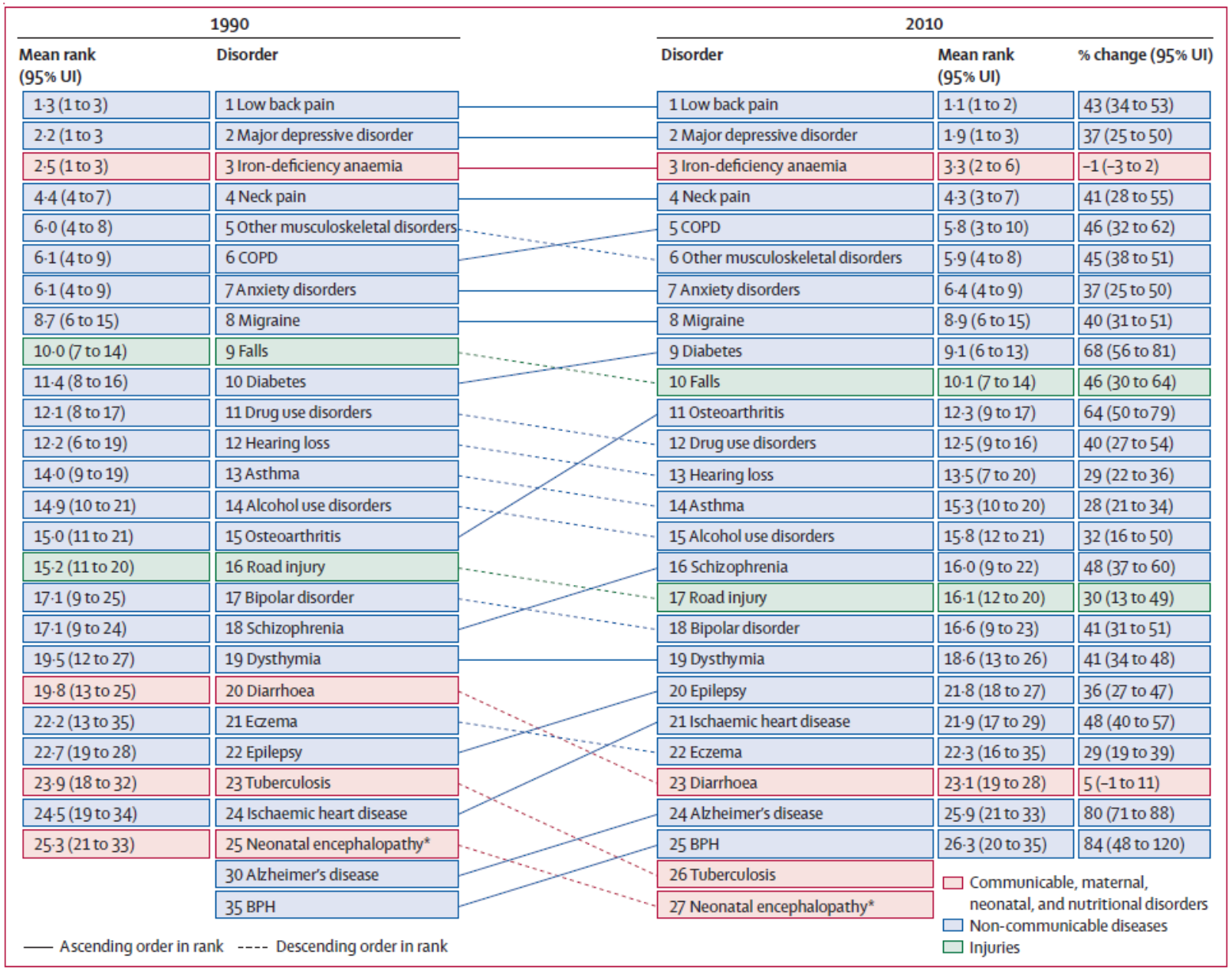


Figure 4: **Global years lived with disability (YLDs) ranks with 95% uncertainty intervals (UI) for the 25 most common causes in 1990 and 2010**
COPD=chronic obstructive pulmonary disease. BPH=benign prostatic hyperplasia. *Includes birth asphyxia/trauma. An interactive version of this figure is available online at http://healthmetricsandevaluation.org/gbd/visualizations/regional.

Un impact socio-économique majeur

- **1e cause d'invalidité dans le monde (1)**
- **17% de la population Française soit 12 millions de patients (2)**
- **2e motif de consultation en médecine générale: soit environ 200 patients par médecin généraliste (3, 5)**
- **Une progression rapide de la maladie: 50% de patients en plus en 10 ans (3)**
- **Un coût élevé pour la société (4):**
- **3.5 milliards d'Euros de dépense par an en France**
- **80% du coût total est porté par la pose de prothèse**
  - **Prothèse de hanche: 9700 EUR**
  - **Prothèse genou: 12 000 EUR**
  - **750 EUR/an en moyenne par patient arthrosique**

Journal Of Musculoskeletal Pain, Early Online: 1–9, 2014

ISSN: 1058-2452 print / 1540-7012 online
DOI: 10.3109/10582452.2014.937550

informa
healthcare

RESEARCH ARTICLE

Annual Cost of Patients with Osteoarthritis of the Hip and Knee in France

Philippe Bertin, MD, PhD[1], Francois Rannou, MD, PhD[2], Laurent Grange, MD, PhD[3], Jean-Noel Dachicourt, PhD[4], Pierre Bruel, MD[5], Corinne Emery, PhD[6], Nathalie Grandfils, PhD[7], and Charles Taieb, MD[8]

(1) Lancet (2012, 2018); (2) Enquête Stop Arthrose, Aflar (2013); (3) Bertin et col. Communication Orale, SFR 2012; (4) P. Bertin, F. Rannou, et al. Journal of Musculoskeletal Pain, 2014; (5) base Ordre des Médecins: 62986 médecins généralistes en exercice.

Conclusion

L'arthrose est un problème majeur de santé publique

C'est une maladie chronique non mortelle

Nécessité d'une prise en charge évaluant la balance bénéfice/risque : voie royale pour les traitements non pharmacologiques, les traitements locaux et les traitements pharmacologiques sans effets secondaires!

L'exemple des guidelines ESCEO, OARSI, ACR

Seminars in Arthritis and Rheumatism 000 (2019) 1–14

Contents lists available at ScienceDirect

Seminars in Arthritis and Rheumatism

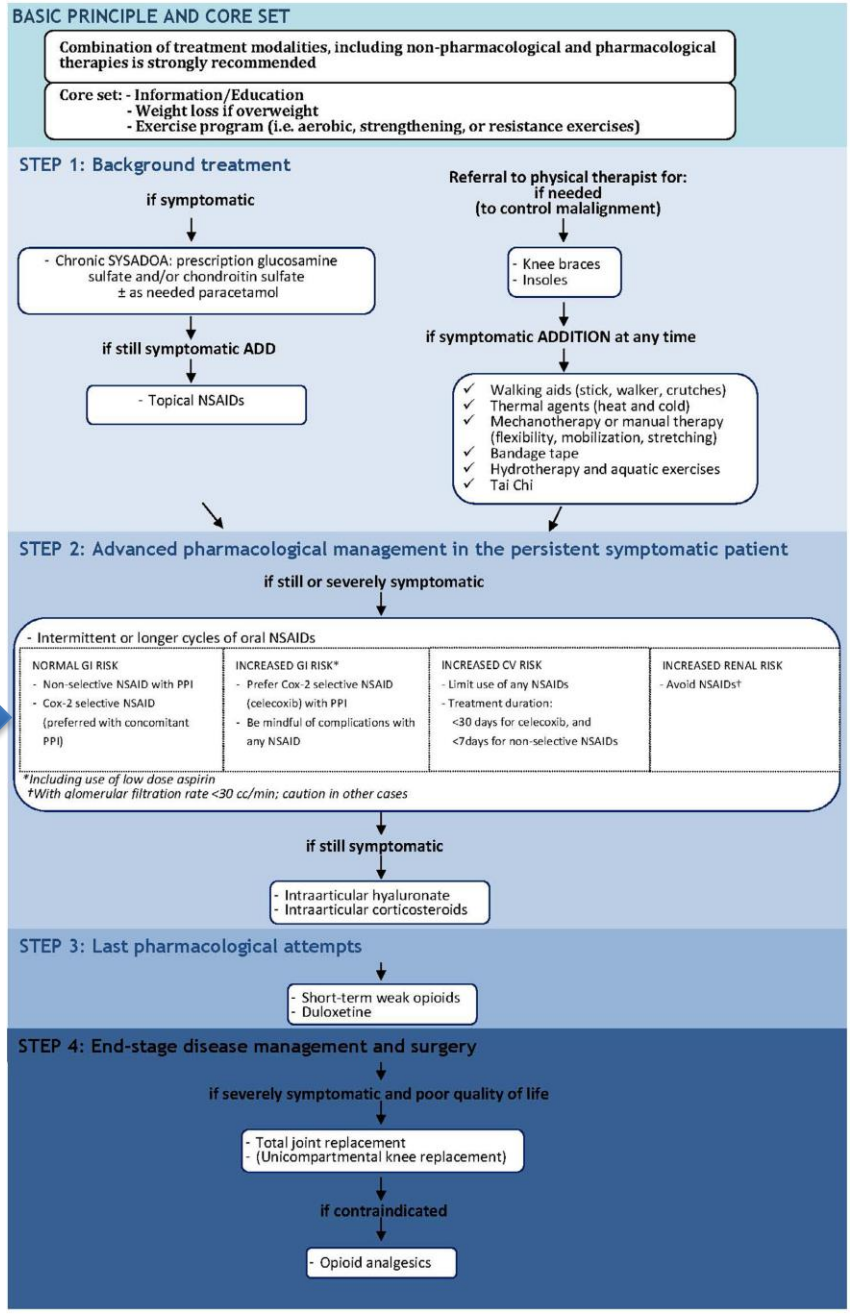
journal homepage: www.elsevier.com/locate/semarthrit

An updated algorithm recommendation for the management of knee osteoarthritis from the European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (ESCEO)

Olivier Bruyère[a,b,*], Germain Honvo[a,b], Nicola Veronese[c], Nigel K. Arden[d,e], Jaime Branco[f], Elizabeth M. Curtis[e], Nasser M. Al-Daghri[g], Gabriel Herrero-Beaumont[h], Johanne Martel-Pelletier[i], Jean-Pierre Pelletier[i], François Rannou[j], René Rizzoli[b,k], Roland Roth[l], Daniel Uebelhart[m], Cyrus Cooper[b,e,n], Jean-Yves Reginster[a,b,g]

Un focus sur la tolérance des traitements!

Evaluation des comorbidités



OARSI guidelines dans la gonarthrose

T.E. McAlindon et al. / Osteoarthritis and Cartilage 22 (2014) 363–388

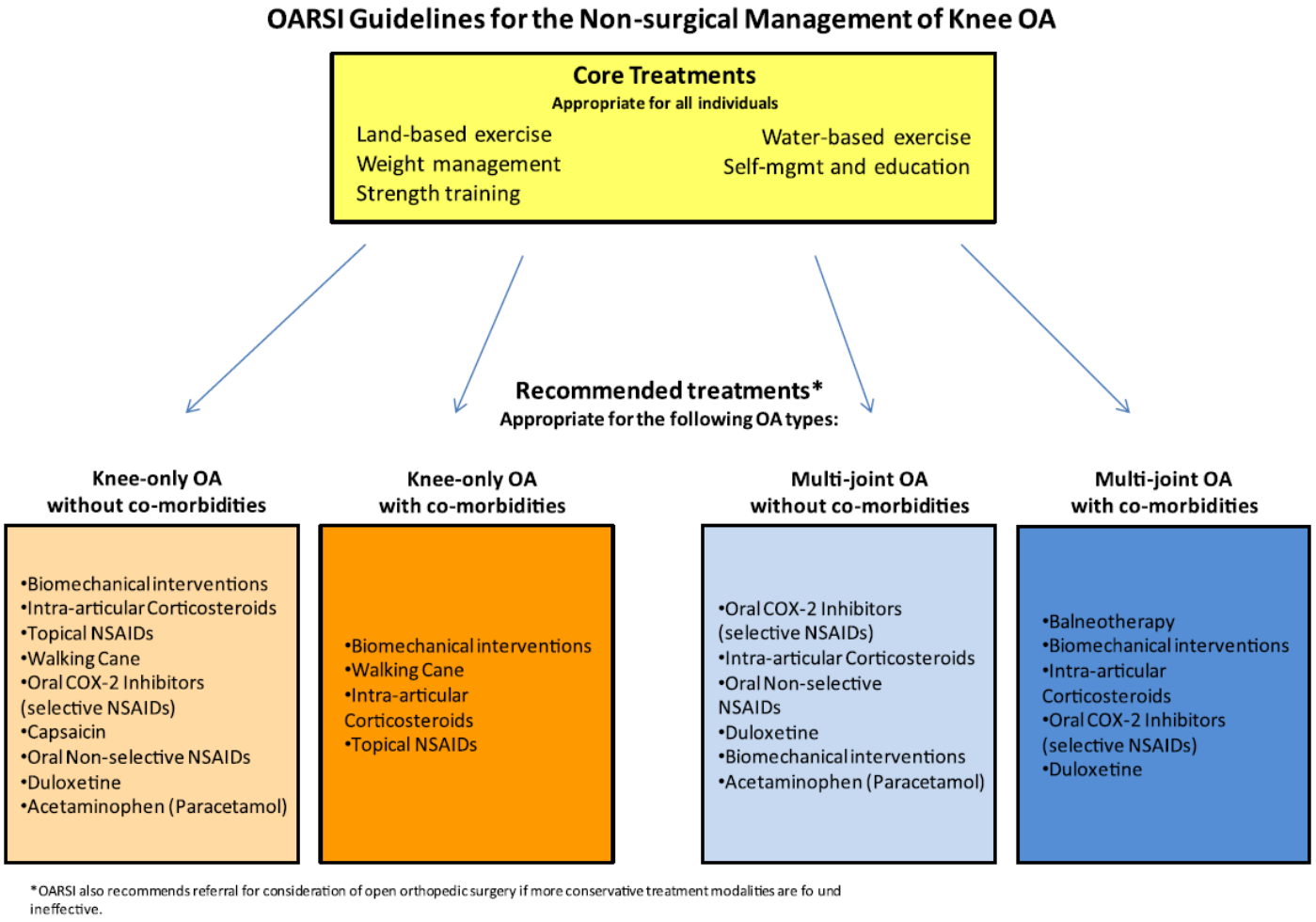


Fig. 1. Appropriate treatments summary.

Arthritis Care & Research
Vol. 0, No. 0, Month 2020, pp 1–14
DOI 10.1002/acr.24131

American College of Rheumatology
Empowering Rheumatology Professionals

2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee

Sharon L. Kolasinski,[1] Tuhina Neogi,[2] Marc C. Hochberg,[3] Carol Oatis,[4] Gordon Guyatt,[5] Joel Block,[6] Leigh Callahan,[7] Cindy Copenhaver,[8] Carole Dodge,[9] David Felson,[2] Kathleen Gellar,[10] William F. Harvey,[11] Gillian Hawker,[12] Edward Herzig,[13] C. Kent Kwoh,[14] Amanda E. Nelson,[7] Jonathan Samuels,[15] Carla Scanzello,[1] Daniel White,[16] Barton Wise,[17] Roy D. Altman,[18] Dana DiRenzo,[19] Joann Fontanarosa,[20] Gina Giradi,[20] Mariko Ishimori,[21] Devyani Misra,[2] Amit Aakash Shah,[22] Anna K. Shmagel,[23] Louise M. Thoma,[7] Marat Turgunbaev,[22] Amy S. Turner,[22] and James Reston[20]

Les strategies thérapeutiques sont basées sur les facteurs modifiables expliquant l'arthrose

- Stress mécanique (TNPs)
- Inflammation, metabolisme (TPs)
- Obesité (TNPs)
- Age
- Genetique

Importance d'utiliser des traitements non pharmacologiques (TNPs) et pharmacologiques (TPs) sans effets secondaires
Importance de la balance effet taille/effets secondaires

Les traitments pharmacologiques:

de l'effet taille aux effets secondaires

- acetaminophen → **Level of evidence**: SR and meta-analysis of RCTs. **Quality of evidence**: Good.

  Estimated Effect Size for Pain (SMD): 0.18 (0.11–0.25)

- NSAIDs → **Level of evidence**: SR and meta-analysis of RCTs. **Quality of evidence**: Good.

  Estimated Effect Size for Pain (SMD): 0.37 (0.26–0.49)

OARSI 2014

BMJ

RESEARCH

Cardiovascular safety of non-steroidal anti-inflammatory drugs: network meta-analysis

Sven Trelle, senior research fellow,[1:2] Stephan Reichenbach, senior research fellow,[1:4] Simon Wandel, research fellow,[1] Pius Hildebrand, clinical reviewer,[3] Beatrice Tschannen, research fellow,[1] Peter M Villiger, head of department and professor of rheumatology,[4] Matthias Egger, head of department and professor of epidemiology and public health,[1] Peter Jüni, head of division and professor of clinical epidemiology[1:2]

Compared with placebo, rofecoxib was associated with the highest risk of myocardial infarction (rate ratio 2.12, 95% credibility interval 1.26 to 3.56), followed by lumiracoxib (2.00, 0.71 to 6.21). Ibuprofen was associated with the highest risk of stroke (3.36, 1.00 to 11.6), followed by diclofenac (2.86, 1.09 to 8.36). Etoricoxib (4.07, 1.23 to 15.7) and diclofenac (3.98, 1.48 to 12.7) were associated with the highest risk of cardiovascular death.

Effets secondaires des traitements pharmacologiques

- gastrointestinal perforation, saignements avec le paracétamol et les AINS
- insuffisance rénale avec le paracétamol et les AINS
- infarctus et événements cardiovasculaires avec les coxibs et les AINS

Importance de la balance Effet taille/Effets secondaires!
Une bonne nouvelle pour les traitements non pharmacologiques, les traitements locaux et les traitements pharmacologiques sans effets secondaires!

Les traitements non pharmacologiques

L’activité physique adaptée

La kinésithérapie analytique

Les orthèses

La perte de poids

Quelques exemples!

Ordonnance type : gonarthrose FTI

- Membres inférieurs
- Renforcement chaîne externe (BF, TFL)
- Renforcement des muscles stabilisateurs du genou (IJ, QU)
- Travail aérobie
- Gain d'amplitude articulaire, lutte contre le flessum, posture et autoposture
- Travail proprioceptif
- Autoprogramme
- Pas d'US, pas de massages

Ordonnance type : gonarthrose FTI

- 1 paire de semelles amortissantes
- 1 genouillère
- 1 paire d’orthèse plantaire avec coin postéro-externe

Ordonnance type : gonarthrose FTI du patient jeune

- 1 paire de semelles amortissantes
- 1 genouillère
- 1 paire d'orthèse plantaire avec coin postéro-externe
- 1 orthèse dynamique

Orthèse pour rhizarthrose

Diminue la douleur et améliore la fonction

Annals of Internal Medicine | ARTICLE

Splint for Base-of-Thumb Osteoarthritis

A Randomized Trial

François Rannou, MD, PhD; Jérôme Dimet, PharmD; Isabelle Boutron, MD, PhD; Gabriel Baron, PhD; Fouad Fayad, MD, MS; Yann Macé, MD; Johann Beaudreuil, MD, PhD; Pascal Richette, MD, PhD; Philippe Ravaud, MD, PhD; Michel Revel, MD; and Serge Poiraudeau, MD, PhD

Rannou et al, Ann Int Med 2009

Ordonnance type : rhizarthrose

- Membres supérieurs
- Gain d'amplitude, posture et autoposture de la 1ère commissure
- Renforcement des muscles intrinsèques et extrinsèques de la main, de la pince pouce index
- Travail aérobie
- Autoprogramme

Ordonnance type : rhizarthrose

- Orthèse de repos pouce-index

Ordonnance type : coxarthrose

- Membres inférieurs
- Renforcement pelvitrochantériens
- Renforcement des muscles stabilisateurs de la hanche (Eventail fessier)
- Travail aérobie
- Gain d'amplitude articulaire, lutte contre la perte d'extension et le flessum, posture et autoposture
- Autoprogramme
- Pas d'US, pas de massages

Ordonnance type : coxarthrose

- 1 paire de semelles amortissantes
- Conseils de chaussage
- Canne

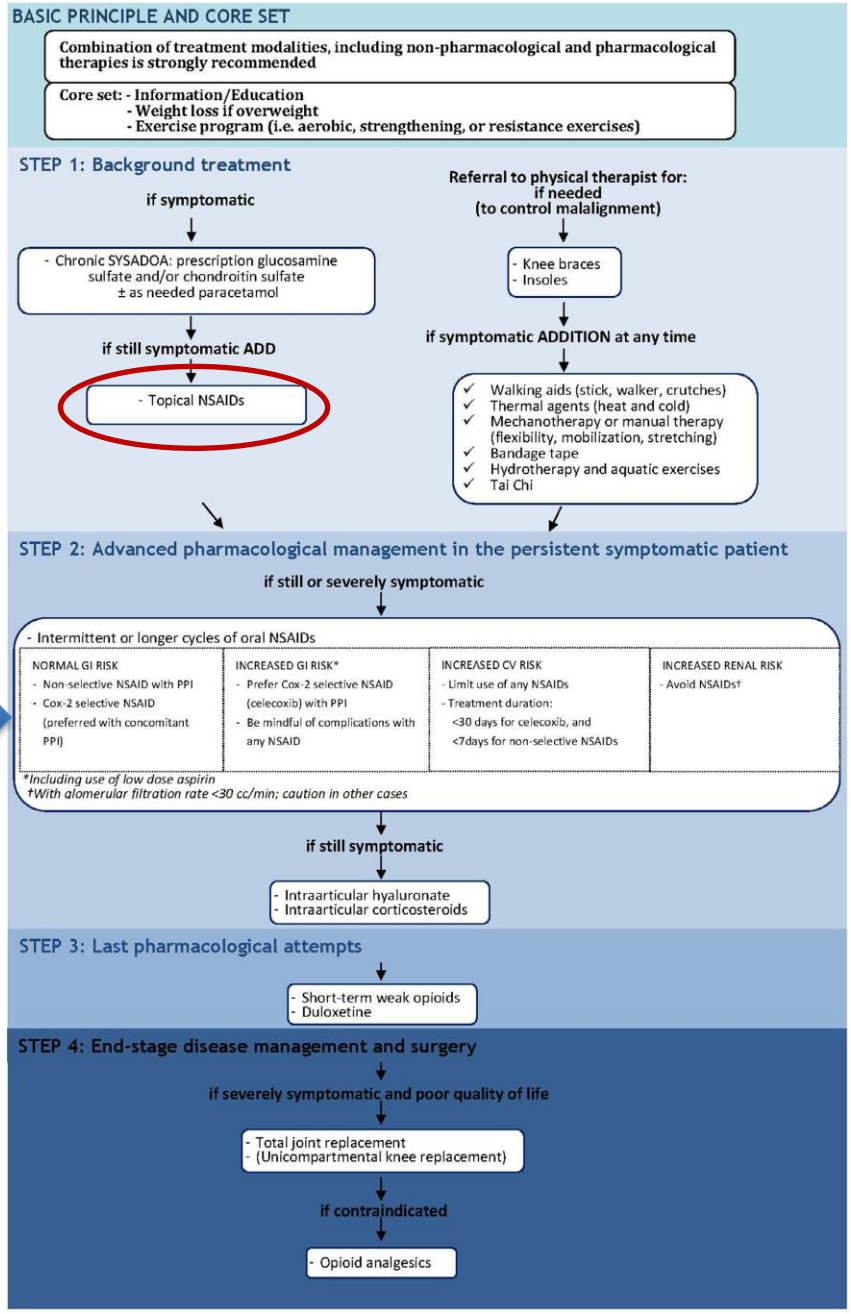
Les traitements locaux

Les topics

Les orthèses

Les injections intra-articulaires

Evaluation des comorbidités



Résumé des guidelines

Injections d’acide Hyaluronique

Traitement de première ligne : non

Traitement de deuxième ligne: OARSI, ACR, ESCEO

Jamais : NICE

Résumé des guidelines

Injections de corticosteroides

Traitement de première ligne : OARSI, NICE

Traitement de seconde ligne: ACR, ESCEO

PRP

- **PRP > placebo but very few and low power studies**
- **PRP = HA at 6 months but :**

  - this result disapear in high quality RCTs meta analysis
  - no data > 12 mois

- **Very good safety**

- **Reproductibility of the results in daily practice very difficult because of the heterogeneity of the PRP preparation**
- **Two major recent publications in the JAMA : negative for ankle and knee**
- **<u>Breaking news</u>: two negative RCTs in the JAMA this year concerning knee and ankle OA**

Traitements plus récents

Flexion (triamcinolone acetonide extended-release injectable suspension) : effet prolongé par changement de véhicule! Sur le marché américain

SAMUMED SM 04690, phase 3 en cours, inhibiteur de Wnt, effet structural?

Bone Therapeutics JTA-004, HA + AINS, phase 2, effet prolongé?

Sprifermin, FGF18, inhibiteurs de NGF

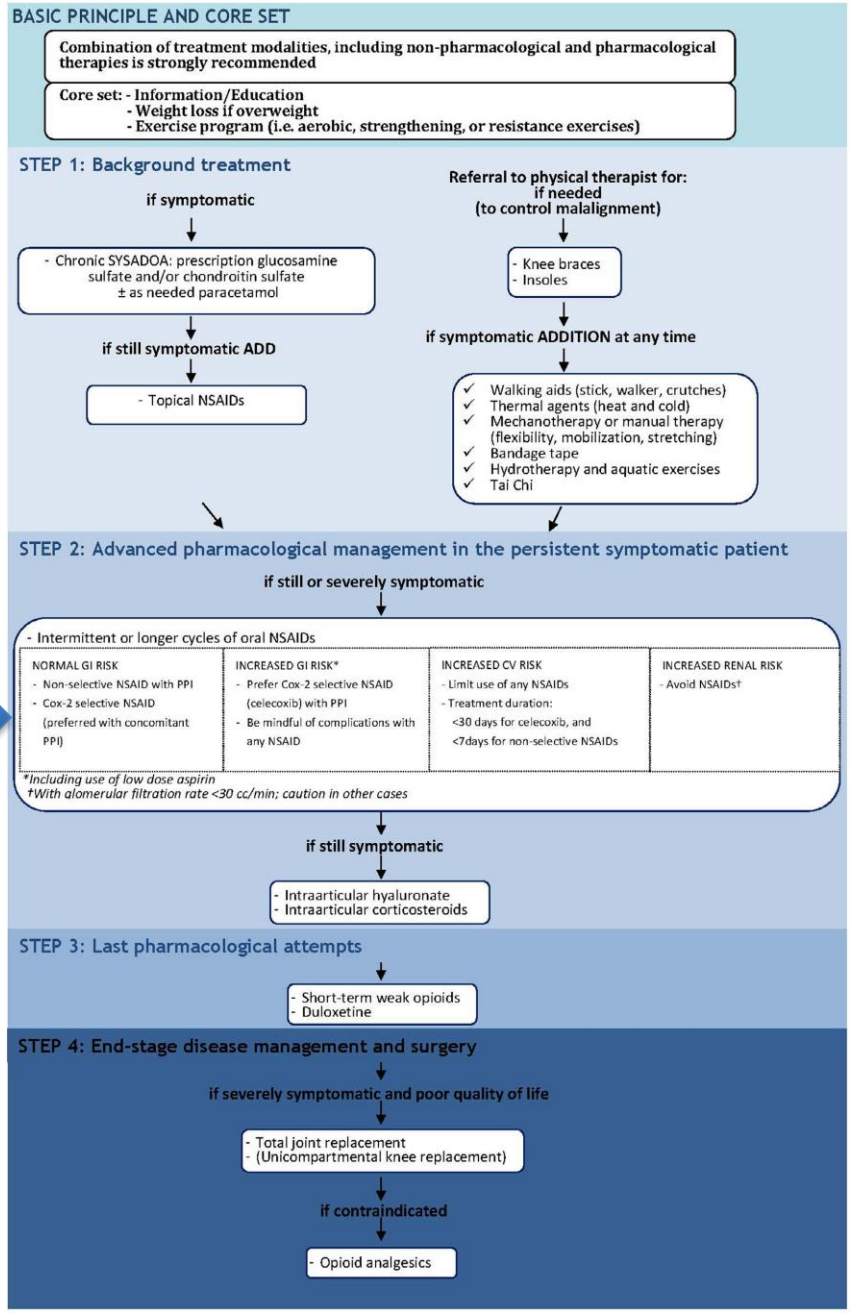
Les traitements pharmacologiques Quel est le problème?

La crise des opioïdes

Les effets secondaires des AINS et du paracétamol

La voie royale pour les topics et les traitements injectables

Evaluation des comorbidités



Conclusion

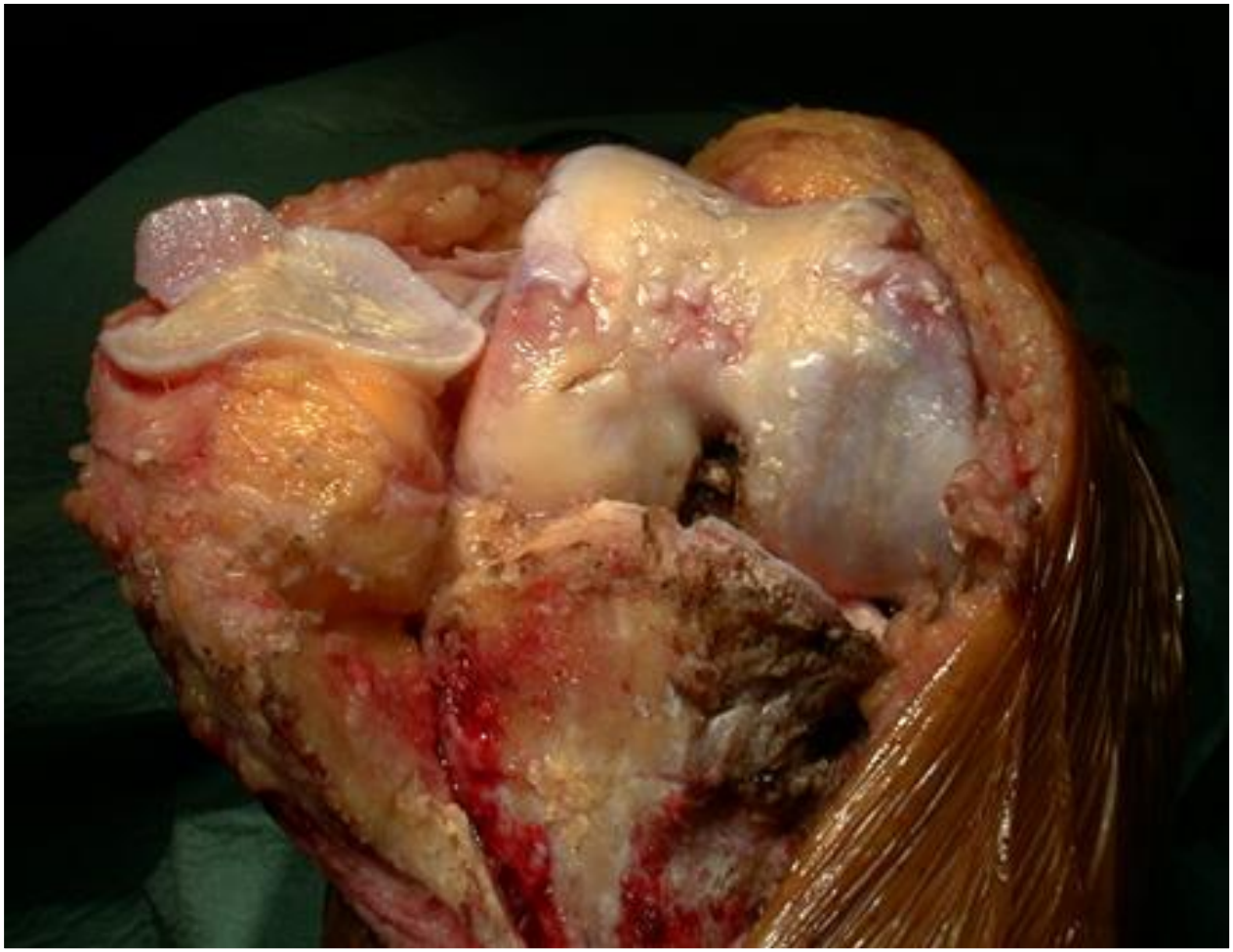
La balance bénéfice/risque est indispensable à prendre en compte dans une maladie fréquente et non mortelle

Les traitements non pharmacologiques, topics et pharmacologiques sans effets secondaires sont le piler de la prise en charge

Nécessité d'ERCs pour évaluer la combinaison de ces trois modalités thérapeutiques

La chirurgie

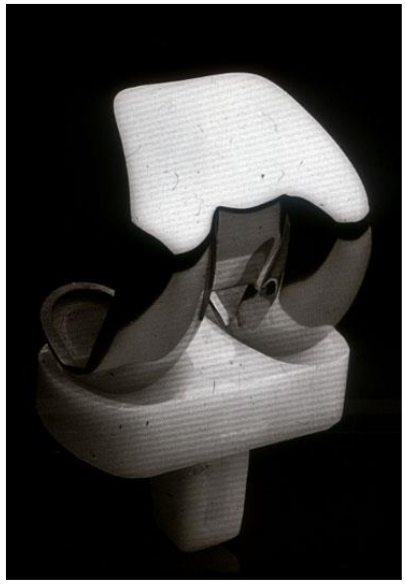
- PTG, PTH
- PUC
- Ostéotomie



Personnal data, Dr F Sailhan

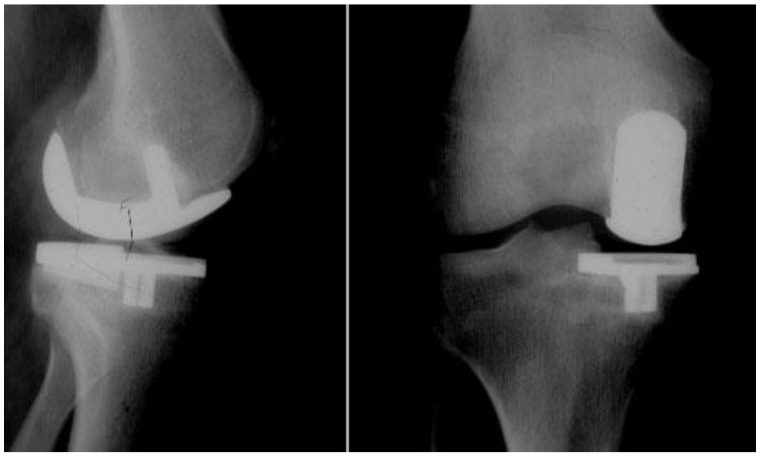
Indications PTH, PTG

- portée par le patient!
- traitement médical inefficace
- gonarthrose bi ou tricompartimentale
- type de prothèse : chirurgien
- âge



Indications PUC, ostéotomie

- arthrose unicompartimentale, sujet jeune
- compartiment femoropatellaire intact
- pivot central intact et LL
- déviation frontale de moins de 5° pour les PUC
- chirurgien entrainé
- pas de surcharge pondérale



De quoi parle-t-on?

1) Hand OA = IPP OA+base thumb (CMC) OA, 2 very different diseases

2) CTC and HA IA injections = IPP injections + CMC injections

Aging Clinical and Experimental Research (2019) 31:19–30
https://doi.org/10.1007/s40520-018-1077-8

ORIGINAL ARTICLE

A new decision tree for diagnosis of osteoarthritis in primary care: international consensus of experts

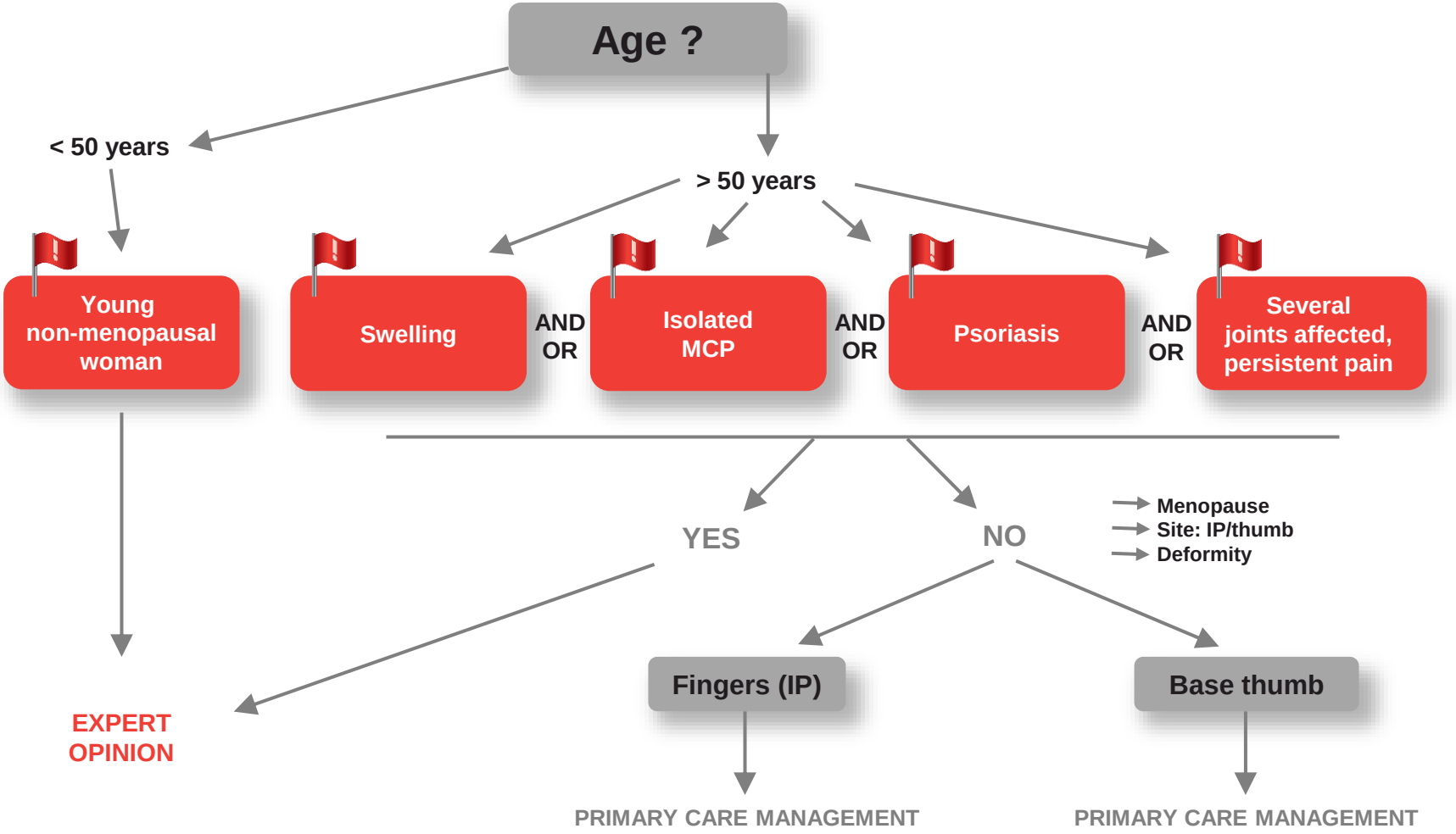
Johanne Martel-Pelletier[1] · Emmanuel Maheu[2] · Jean-Pierre Pelletier[1] · Ludmila Alekseeva[3] · Ouafa Mkinsi[4] · Jaime Branco[5] · Pierre Monod[6] · Frédéric Planta[7] · Jean-Yves Reginster[8,9] · François Rannou[10]

Received: 7 June 2018 / Accepted: 16 November 2018 / Published online: 11 December 2018

Diagnostic factors already established:
Hand/finger pain
Radiographic osteophyte with or without joint space narrowing
Family history of hand OA

HAND

** Depending on the country, the most appropriate specialist can be different: rheumatologist, orthopaedic surgeon, physical medicine and rehabilitation physician.*



Recommendation

2018 update of the EULAR recommendations for the management of hand osteoarthritis

Margreet Kloppenburg,[1,2] Féline PB Kroon,[1] Francisco J Blanco,[3] Michael Doherty,[4] Krysia S Dziedzic,[5] Elsie Greibrokk,[6] Ida K Haugen,[6] Gabriel Herrero-Beaumont,[7] Helgi Jonsson,[8] Ingvild Kjeken,[6] Emmanuel Maheu,[9] Roberta Ramonda,[10] Marco JPF Ritt,[11] Wilma Smeets,[1,2,3] Josef S Smolen,[12] Tanja A Stamm,[13] Zoltan Szekanecz,[14] Ruth Wittoek,[15] Loreto Carmona[16]

Kloppenburg M, *et al*. *Ann Rheum Dis* 2019;**78**:16–24. doi:10.1136/annrheumdis-2018-213826

Table 1 2018 Update of the EULAR recommendations for the management of hand OA

		LoE*	GoR†	LoA (0–10)
Overarching principles				
A.	The primary goal of managing hand OA is to control symptoms, such as pain and stiffness, and to optimise hand function, in order to maximise activity, participation and quality of life.			9.7 (0.7)
B.	All patients should be offered information on the nature and course of the disease, as well as education on self-management principles and treatment options.			9.8 (0.8)
C.	Management of hand OA should be individualised taking into account its localisation and severity, as well as comorbidities.			9.9 (0.2)
D.	Management of hand OA should be based on a shared decision between the patient and the health professional.			9.6 (1.1)
E.	Optimal management of hand OA usually requires a multidisciplinary approach. In addition to non-pharmacological modalities, pharmacological options and surgery should be considered.			9.3 (1.2)
Recommendations				
1.	Education and training in ergonomic principles, pacing of activity and use of assistive devices should be offered to every patient.	1b	A	9.3 (1.1)
2.	Exercises to improve function and muscle strength, as well as to reduce pain, should be considered for every patient.	1a	A	9.1 (1.6)
3.	Orthoses should be considered for symptom relief in patients with thumb base OA. Long-term use is advocated.	1b	A	9.3 (1.0)
4.	Topical treatments are preferred over systemic treatments because of safety reasons. Topical NSAIDs are the first pharmacological topical treatment of choice.	1b	A	8.6 (1.8)
5.	Oral analgesics, particularly NSAIDs, should be considered for a limited duration for relief of symptoms.	1a	A	9.4 (0.9)
6.	Chondroitin sulfate may be used in patients with hand OA for pain relief and improvement in functioning.	1b	A	7.3 (2.7)
7.	Intra-articular injections of glucocorticoids should not generally be used in patients with hand OA‡, but may be considered in patients with painful interphalangeal joints§.	1a‡–1b§	A	7.9 (2.4)
8.	Patients with hand OA should not be treated with conventional or biological disease-modifying antirheumatic drugs	1a	A	8.8 (1.8)
9.	Surgery should be considered for patients with structural abnormalities when other treatment modalities have not been sufficiently effective in relieving pain. Trapeziectomy should be considered in patients with thumb base OA and arthrodesis or arthroplasty in patients with interphalangeal OA.	5	D	9.4 (1.4)
10.	Long-term follow-up of patients with hand OA should be adapted to the patient's individual needs.	5	D	9.5 (1.7)

*1a: systematic review of RCTs; 1b: individual RCT; 2a: systematic review of cohort studies; 2b: individual cohort study (including low-quality RCT; eg,<80% follow-up); 3a: systematic review of case-control studies; 3b: individual case-control study; 4: case-series (and poor quality cohort and case-control studies); 5: expert opinion without explicit critical appraisal, or based on physiology, bench research or 'first principles'.[17]

†A: based on consistent level 1 evidence; B: based on consistent level 2 or 3 evidence or extrapolations from level 1 evidence; C: based on level 4 evidence or extrapolations from level 2 or 3 evidence; D: based on level 5 evidence or on troublingly inconsistent or inconclusive studies of any level.[17]

EULAR, European League Against Rheumatism; GoR, grade of recommendation; LoA, level of agreement; LoE, level of evidence; NSAIDs, non-steroidal anti-inflammatory drugs; OA, osteoarthritis; RCT, randomised clinical trial.

Kloppenburg M, *et al*. *Ann Rheum Dis* 2019;**78**:16–24. doi:10.1136/annrheumdis-2018-213826

interphalangeal OA, intra-articular glucocorticoid injections were more effective than placebo for pain during joint movement and joint swelling.[67] The formulation 'should not generally be used' was chosen, since the task force recognised that in specific cases where, for example, clear joint inflammation is present, injection with glucocorticoids may still be a therapeutic option. Evidence pertaining specific subgroups that could benefit from intra-articular glucocorticoids, for example, patients with active joint inflammation due to a flare of the disease, is lacking. It is

In conclusion

1) CTC injection could be used for a specific sugroup of patients: IPP OA with active inflammation!

2) No beneficial effect of CTC injection for base thumb OA

3) Nothing related to HA

Kloppenburg M, *et al*. *Ann Rheum Dis* 2019;**78**:16–24. doi:10.1136/annrheumdis-2018-213826

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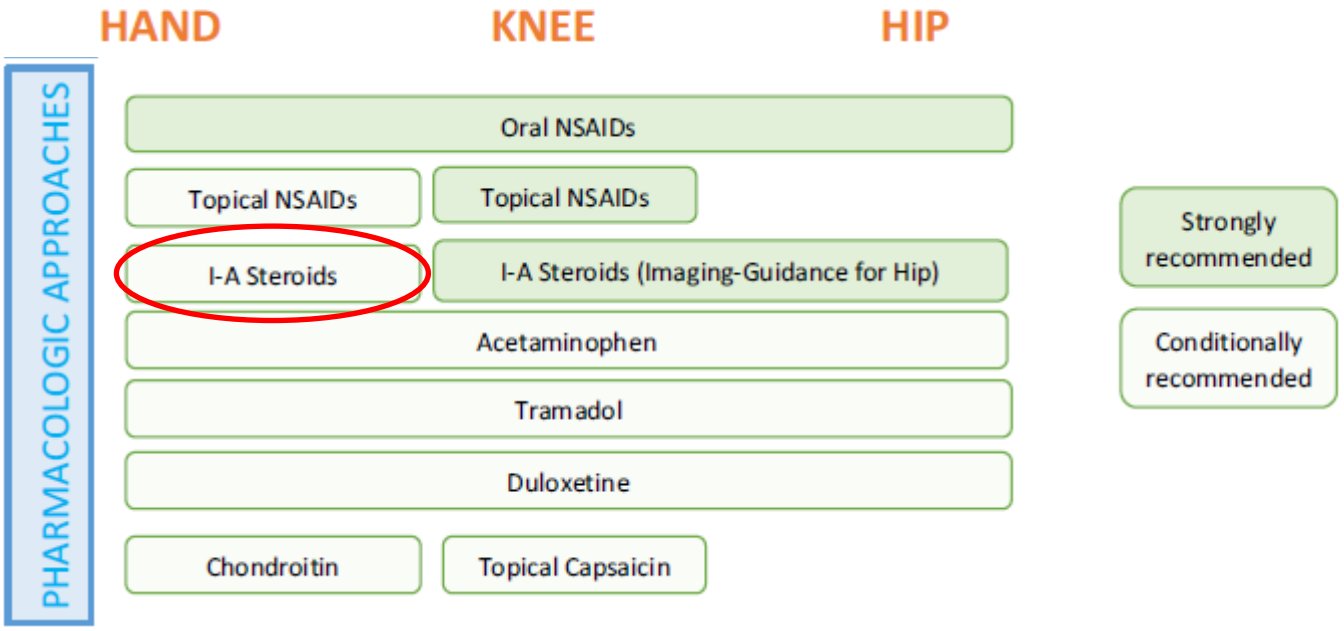
Sharon L. Kolasinski,[1] Tuhina Neogi,[2] Marc C. Hochberg,[3] Carol Oatis,[4] Gordon Guyatt,[5] Joel Block,[6] Leigh Callahan,[7] Cindy Copenhaver,[8] Carole Dodge,[9] David Felson,[2] Kathleen Gellar,[10] William F. Harvey,[11] Gillian Hawker,[12] Edward Herzig,[13] C. Kent Kwoh,[14] Amanda E. Nelson,[7] Jonathan Samuels,[15] Carla Scanzello,[1] Daniel White,[16] Barton Wise,[17] Roy D. Altman,[18] Dana DiRenzo,[19] Joann Fontanarosa,[20] Gina Giradi,[20] Mariko Ishimori,[21] Devyani Misra,[2] Amit Aakash Shah,[22] Anna K. Shmagel,[23] Louise M. Thoma,[7] Marat Turgunbaev,[22] Amy S. Turner,[22] and James Reston[20]

Table 1. Recommendations for physical, psychosocial, and mind-body approaches for the management of osteoarthritis of the hand, knee, and hip

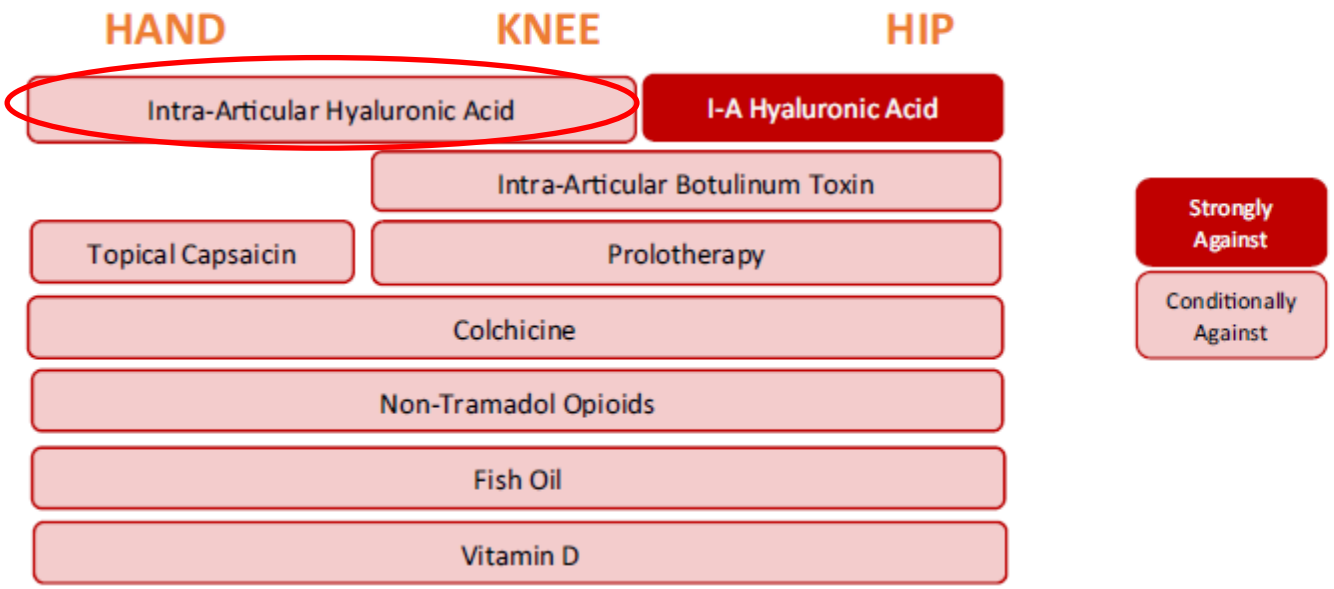
Intervention	Joint		
	Hand	Knee	Hip
Exercise			
Balance training			
Weight loss			
Self-efficacy and self-management programs			
Tai chi			
Yoga			
Cognitive behavioral therapy			
Cane			
Tibiofemoral knee braces		(Tibiofemoral)	
Patellofemoral braces		(Patellofemoral)	
Kinesiotaping	(First carpometacarpal)		
Hand orthosis	(First carpometacarpal)		
Hand orthosis	(Other joints)		
Modified shoes			
Lateral and medial wedged insoles			
Acupuncture			
Thermal interventions			
Paraffin			
Radiofrequency ablation			
Massage therapy			
Manual therapy with/without exercise			
Iontophoresis	(First carpometacarpal)		
Pulsed vibration therapy			
Transcutaneous electrical nerve stimulation			

Strongly recommended
Conditionally recommended
Strongly recommended against
Conditionally recommended against
No recommendation



Intraarticular glucocorticoid injections are strongly recommended for patients with knee and/or hip OA and conditionally recommended for patients with hand OA.

Intraarticular glucocorticoid injections versus other injections are conditionally recommended for patients with knee, hip, and/or hand OA.



Intraarticular hyaluronic acid injections are conditionally recommended *against* in patients with knee and/or first CMC joint OA and strongly recommended *against* in patients with hip OA.

ACR conclusion

1) CTC injection is conditionnaly recommended in hand OA

2) No distinction between IPP or CMC OA related to CTC injection

3) HA injection conditionnaly against for CMC. Nothing related to IPP

Recent publications

Drugs & Aging (2019) 36 (Suppl 1):S101–S127
https://doi.org/10.1007/s40266-019-00657-w

SYSTEMATIC REVIEW

Safety of Intra-articular Hyaluronic Acid Injections in Osteoarthritis: Outcomes of a Systematic Review and Meta-Analysis

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Heyworth 2008 [80]	Hand (Basal joint - thumb)	IA HA: 65.0 ± 2.0 IA SA: 64.0 ± 2.0	Avian (derived from rooster combs)	NA	NA (1-mL injection of hylan G-F 20)	1/2	26 weeks	NSAIDs (ibuprofen 400 mg every 4–6 h, as needed)	All reported: "No AE observed during the study"	Yes

Recent publications

Osteoarthritis

RMD Open
Rheumatic & Musculoskeletal Diseases

REVIEW

Efficacy and safety of non-pharmacological, pharmacological and surgical treatment for hand osteoarthritis: a systematic literature review informing the 2018 update of the EULAR recommendations for the management of hand osteoarthritis

Féline P B Kroon,[1] Loreto Carmona,[2] Jan W Schoones,[3] Margreet Kloppenburg[1,4]

Single trials demonstrated positive results for chondroitin sulfate and intra-articular glucocorticoid injections in interphalangeal joints. Pharmacological treatments for which no clear beneficial effect was shown include paracetamol, intra-articular thumb base injections of glucocorticoids or hyaluronic acid, low-dose

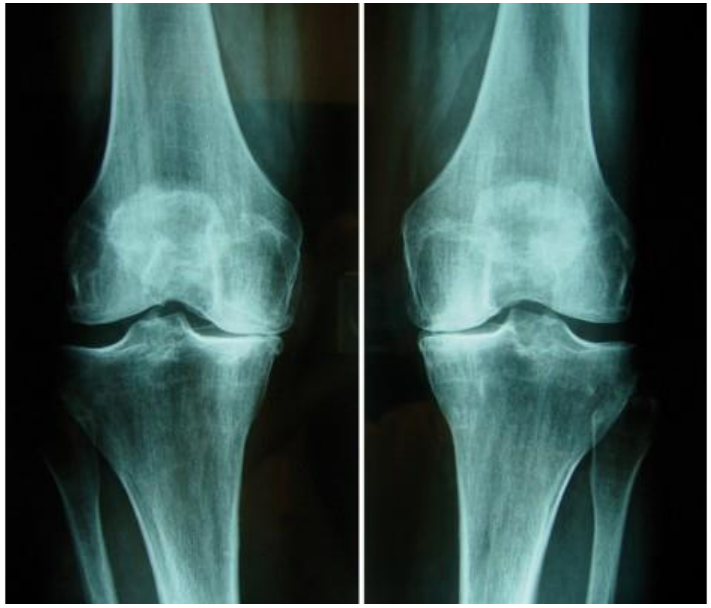
Kroon FPB, *et al. RMD Open* 2018;**4**:e000734. doi:10.1136/rmdopen-2018-000734

Intra-articular botulinum toxin A injection for painful base-of-thumb osteoarthritis: a double-blind, randomised, controlled, phase 3 trial (RHIBOT)

Christelle Nguyen, Hendy Abdoul, Raphaël Campagna, Henri Guerini*, Léa Jilet, Catherine Bedin, Franck Chagny, Gaëlle Couraud, Camille Daste, Jean-Luc Drapé, Rémy Fléchon, Charlotte Gil, Corinne Guérin, Marie-Martine Lefèvre-Colau, Serge Poiraudeau†, Estelle Randriamampandry, Alexandra Roren, Antoine Feydy, François Rannou*

Nguyen C et al. Lancet Rheumatol 2022

Botulinum toxin (BT) injection



Mechanism of action

- Intra-articular injection of BT
  - Substance P, CGRP and Glutamate contribute to OA pain
  - BT inhibits these neuropeptides
  - Anti-inflammatory effect

Summary of the trials

- Published ➔ 6 RCTS
  - 4 knee pain ± OA : 3 negatives, 1 positive
  - 1 ankle OA : négative
  - 1 shoulder pain : positive

Boon et al, PMR 2010
Hsieh et al, PMR 2016
Singh et al, Transl Res 2009
Mahowald et al, Toxicon 2009
Sun et al, J Foot Ankle Res 2014
Arendt-Nielsen et al, Scan J Rheumatol 2017

- Non published ➔ 2 RCTs
  - 1 knee OA : négative
  - 1 base thumb OA : to small number of patients enrolled

NCT02230956
NCT01045694

- Registered ➔ 4 RCTs
  - 3 knee OA
  - 1 base thumb OA

NCT02829281, NCT02832713, NCT02139319
NCT03187626 (RHIBOT)

- Méta-analysis ➔ 2

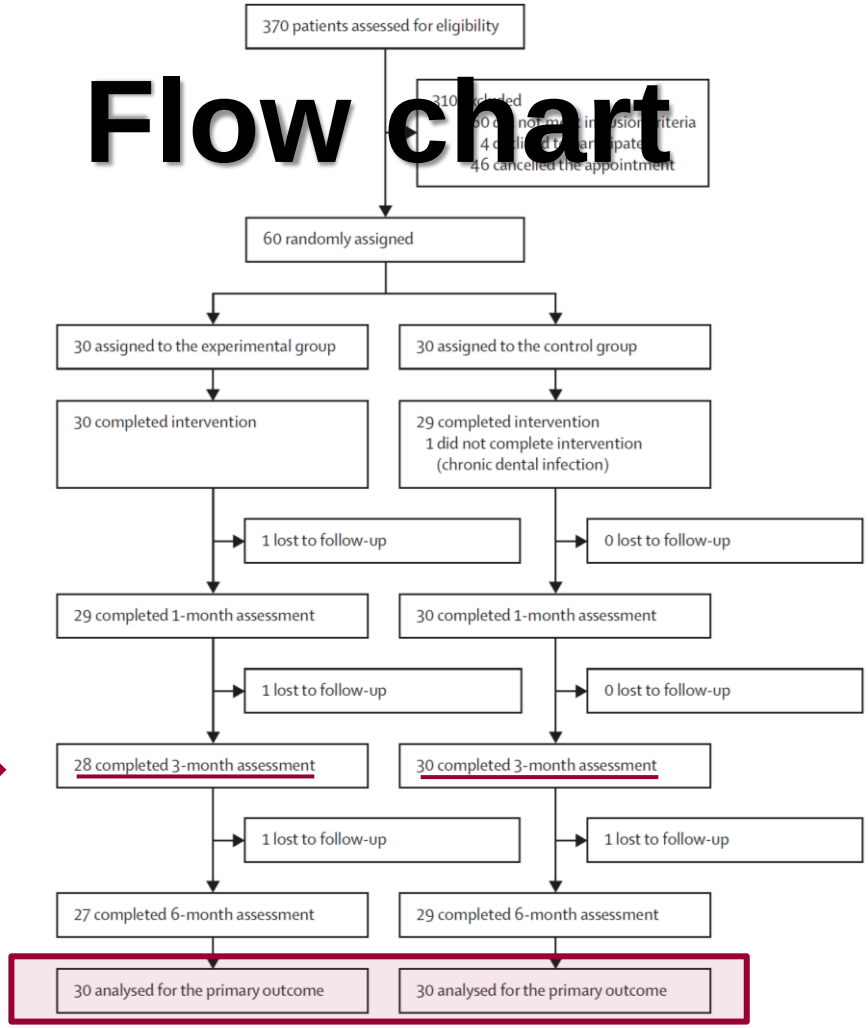
Wu et al, Clin Rehab 2017
Courseau et al, Clin J Pain 2017

The only RCT of high quality has never been published!

- 176 patients with knee OA
- 3 groups
  - 44 patients = 1 injection intra-articular of 400 units ofTBA
  - 43 patients = 1 injection intra-articular of 200 units ofTBA
  - 89 patients = 1 injection of physiological serum
- Primary outcome (pain at W1) = negative
- Secondary outcomes (pain and function at M6) = negative

NCT02230956

Flow chart



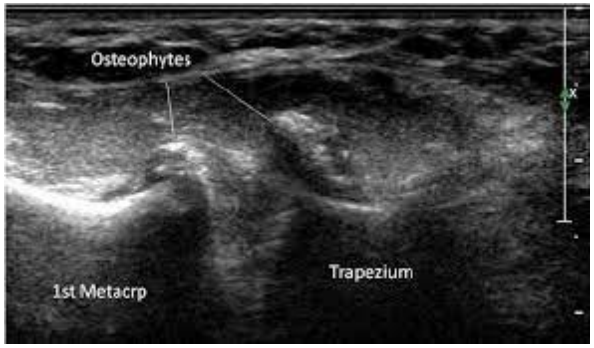
Recrutement

Allocation

Suivi

Analyse

Interventions



Gil C et al. BMJ Open 2018; Rannou F et al. Ann Int Med 2009

Critère principal à M3

Critères de jugement	Botox® + orthèse (n = 30)	Sérum salé + orthèse (n = 30)	Différence absolue (IC à 95%)	p
À 3 mois après la randomisation				
• Variation de l'intensité des douleurs (0-100)	-25,7 (-35,5 to -15,8)	-9,7 (-17,1 to -2,2)	-16,0 (-28,1 à -3,9)	0,043

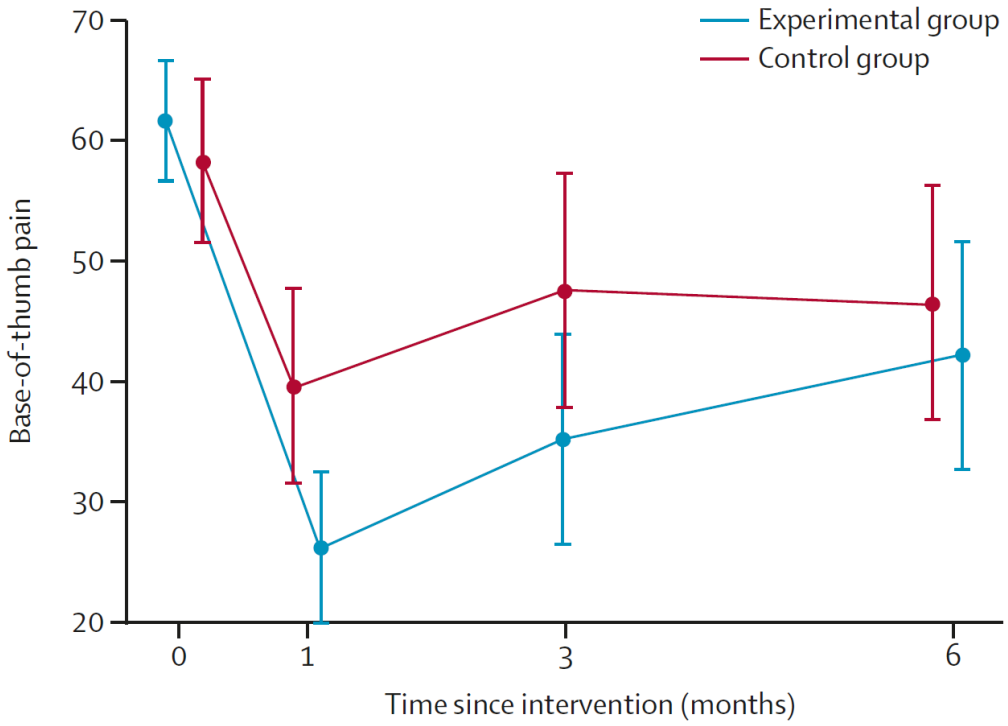
➔ **Effet-taille modéré : 0,68 (IC 95% 0,15 à 1,20)**

Résultats : Critères secondaires M1, M3, M6

Critères de jugement	Botox® + orthèse (n = 30)	Sérum salé + orthèse (n = 30)	Différence absolue (IC à 95%)	RR ou ratio des moyennes (IC à 95%)	p
À 1 mois après la randomisation					
• **Variation de l'intensité des douleurs (0-100)**	**-34,3 (-42,9 à -25,7)**	**-18,0 (-26,2 à -9,8)**	**-16,3 (-27,9 à -4,7)**	**Non applicable**	**0,004**
À 3 mois après la randomisation					
• Variation de l'échelle de la main de Cochin (0-90)	-7,3 (-12,3 à -2,3)	-5,8 (-11,2 à -0,3)	-1,5 (-8,8 à 5,7)	Non applicable	0,854
• Variation de l'évaluation globale du patient (0-100)	0,3 (-5,7 à 6,4)	-3,7 (-9,0 à 1,7)	4,0 (-3,9 à 11,4)	Non applicable	0,248
• **Réponse OARSI-OMERACT, n (%)**	**22 (73)**	**18 (60)**	**13,3 (-10,3 à 37,0)**	**1,2 (0,9 à 1,8)**	**0,273**
• Antalgiques depuis le dernier contact, n (%)	12 (43)	8 (28)	15,3 (-9,2 à 39,8)	1,6 (0,8 à 3,2)	0,227
• AINS depuis le dernier contact, n (%)	5 (18)	4 (14)	3,6 (-15,6 à 22,8)	1,3 (0,4 à 4,2)	0,716
À 6 mois après la randomisation					
• Variation de l'intensité des douleurs (0-100)	-18,3 (-26,9 à -9,8)	-11,7 (-21,2 à -2,2)	-6,7 (-19,2 à 5,9)	Non applicable	0,367
• Variation de l'échelle de la main de Cochin (0-90)	-7,5 (-13,5 à -1,5)	-4,6 (-10,8 à 1,6)	-2,9 (-11,3 à 5,5)	Non applicable	0,664
• Variation de l'évaluation globale du patient (0-100)	-6,7 (-13,0 à -0,4)	-5,7 (-11,6 à 0,3)	-1,0 (-9,5 à 7,5)	Non applicable	0,818
• Réponse OARSI-OMERACT, n (%)	17 (57)	20 (67)	-10,0 (-34,5 à 14,5)	0,9 (0,6 à 1,3)	0,426
• Antalgiques depuis le dernier contact, n (%)	14 (52)	11 (39)	12,6 (-13,6 à 38,7)	1,3 (0,7 à 2,4)	0,350
• AINS depuis le dernier contact, n (%)	6 (25)	6 (21)	3,6 (-19,5 à 26,6)	1,2 (0,4 à 3,1)	0,761

➔ **Intervention comparatrice active et performante : 60% de répondeurs OARSI-OMERACT**

Profil de réponse sur 6 mois



Conclusion and perspective

It is important to differentiate IPP OA from CMC OA

CTC coud be tried in IPP OA when it is clinically inflammatory,

For CMC, as this OA is more mechanical, HA could be tried

These molecules can be tried because they are totally safe

Image guided injection or not has to be assessed

No structural effect

PRP, botulinom toxin have to be assessed