Place des orthèses dans la gonarthrose

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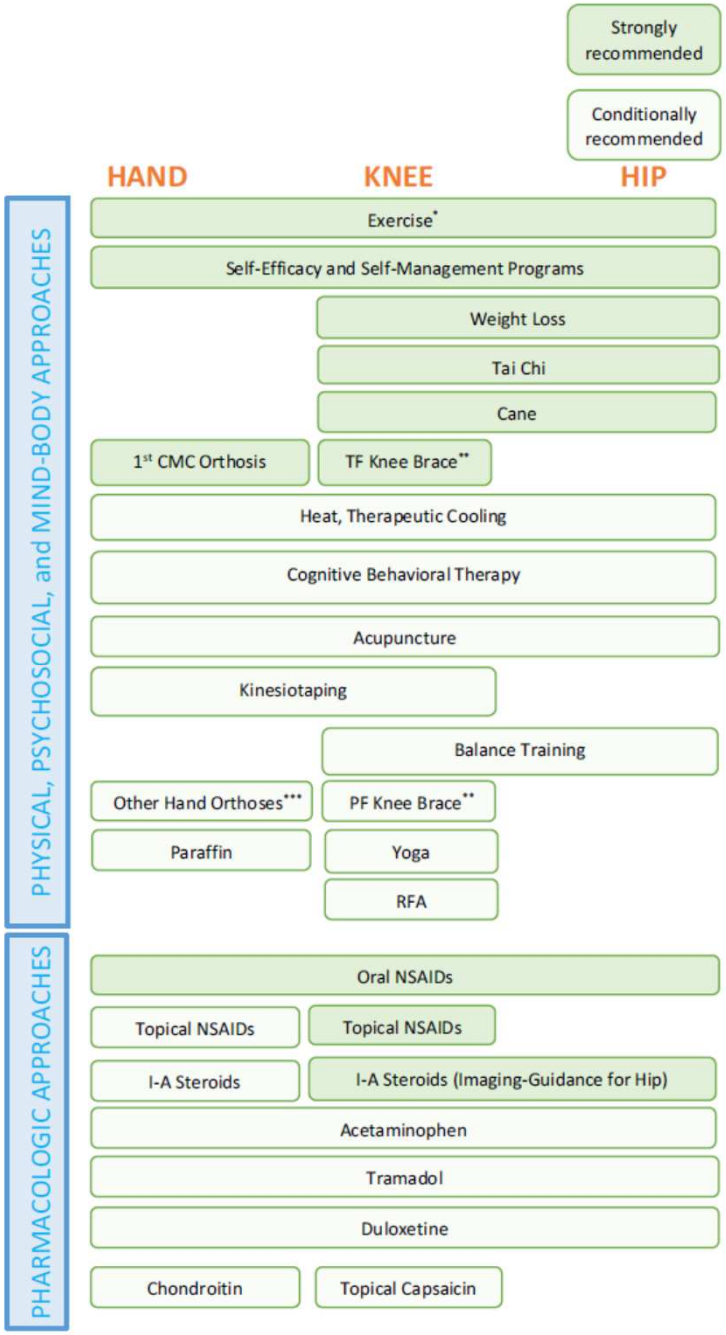
Déclaration d’intérêts

- Groupe Thuasne

Introduction

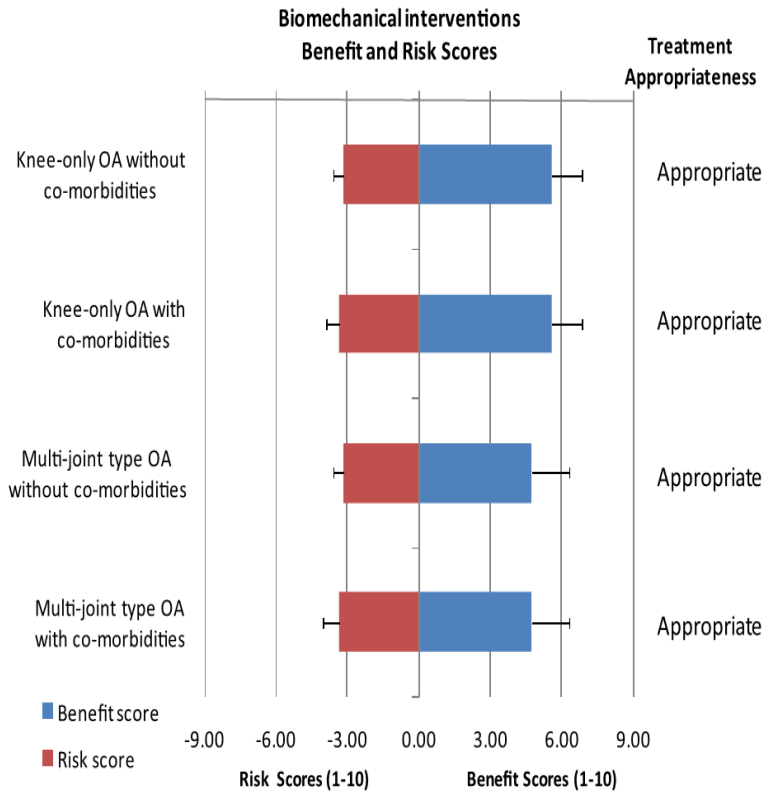
- Prise en charge de la gonarthrose non pharmacologique ++
- Recours variable aux orthèses de genou (praticien dépendant)

Recommandations ACR 2019



OARSI 2014

Osteoarthritis Research Society International



Biomechanical interventions

Recommendation:

- **Appropriate**

Rationale:

We recommend use of biomechanical interventions as directed by an appropriate specialist. A 2011 SR and three recent RCTs evaluated the effectiveness of knee braces, knee sleeves, and foot orthoses in conservative management of knee OA[10–13]. One review suggested that knee braces and foot orthoses were effective in decreasing pain, joint stiffness, and drug dosage and also improved physical function, with insignificant adverse events[10]. The conclusions were limited due to the heterogeneity and poor quality of available evidence. Results regarding lateral wedge insoles varied, with one RCT demonstrating no symptomatic or structural benefits[11] and another asserting their appropriateness as a possible alternative to valgus bracing for conservative medial knee OA treatment[12]. One recent RCT found that variable-stiffness walking shoes reduced adduction movement and pain and improved function after 6 months of wear, though this benefit was not statistically significant when compared to constant-stiffness footwear[13].

Quality assessment:

Level of evidence: SR of RCTs and non-randomized clinical trials.

Quality of evidence: Fair.

Estimated Effect Size for Pain or Function: Not available.

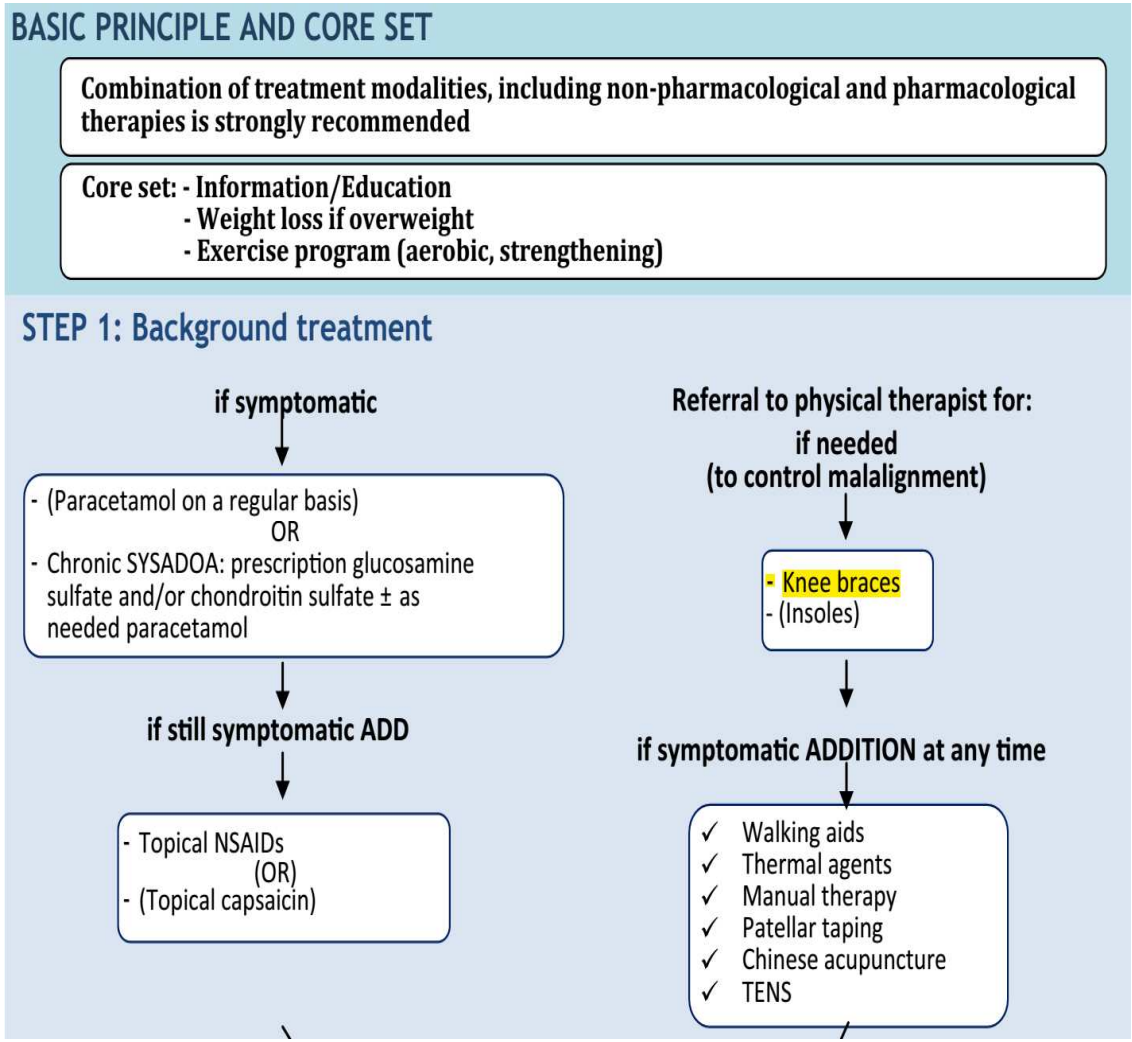
McAlindon T et al. Osteoarthritis Cartilage 2014

OARSI 2019

Recommandations de ne pas utiliser : niveau de preuve faible

ESCEO 2014

European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis



Bruyère O et al. Semin Arthritis Rheum 2014

ESCEO 2014

European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis

Varus or valgus malalignment is a risk factor for knee OA and its progression. Therefore, there is a theoretical rationale for using biomechanical interventions such as braces or insoles in patients with unicompartmental tibiofemoral OA to reduce malalignment, to reduce the consequent articular stress, and thus to improve pain and function, or even retard disease progression. Despite significant heterogeneity and poor trial quality, there is reasonable evidence to suggest that knee braces actually improve biomechanical imbalance [21] and may improve knee OA symptoms [22].

Niveau d'évidence intermédiaire
Pas d'effet structural sur progression de l'arthrose

There is insufficient evidence to determine whether braces or insoles affect the progression of knee OA. EULAR did not recommend the use of insoles among non-pharmacological treatments for knee OA, also in view of an increased risk of adverse effects [14]. On the other hand, appropriate footwear (including shock-absorbing soles, foot arches support, and control for foot pronation if necessary, while avoiding raised heels) should be recommended [14].

Ideal patients for bracing are younger individuals, more physically active, not severely obese, with unicompartmental symptomatic tibiofemoral OA and malalignment that is reducible by valgus or varus stress maneuvers on physical examination.

Phénotype de répondeurs potentiels

Bruyère O et al. Semin Arthritis Rheum 2014

Principes des orthèses à visée biomécanique (décharge en valgus ou varus)

Contents lists available at ScienceDirect

The Knee

Biomechanical effectiveness of a distraction–rotation knee brace in medial knee osteoarthritis: Preliminary results

Davy Laroche [a,b,*], Claire Morisset [a,b], Clementine Fortunet [c], Vincent Gremeaux [a,b,d,e], Jean-Francis Maillefert [b,c,e], Paul Ornetti [b,c,e]

A B S T R A C T

Background: Non-pharmacological therapies are recommended for the care of knee osteoarthritis patients. Unloader knee braces provide an interesting functional approach, which aims to modulate mechanical stress on the symptomatic joint compartment. We aimed to confirm the biomechanical effects and evaluate functional benefits of a new knee brace that combines a valgus effect with knee and tibial external rotation during gait in medial osteoarthritis patients.

Methods: Twenty patients with unilateral symptomatic medial knee osteoarthritis were included and they performed two test sessions of 3D gait analysis with and without the brace at the initial evaluation (W0) and after 5 weeks (W5) of wearing the brace. VAS-pain, satisfaction scores, WOMAC scores, spatio-temporal gait parameters (gait speed, stride length, stance and double stance phases, step width), and biomechanical data of the ipsilateral lower limb (hip, knee, ankle and foot progression angles) were recorded at each session.

Results: VAS-pain and WOMAC significantly decreased at W5. Walking speed was not significantly modified by knee bracing at W0, but increased significantly at W5. Knee adduction moments and foot progression angles significantly decreased in the terminal stance and push off, respectively, with bracing at W0 and W5. Lower-limb joint angles, moments and powers were significantly modified by wearing the brace at W0 and W5.

Conclusion: This new knee brace with distraction–rotation effects significantly alters knee adduction moments and foot progression angles during gait, which might lead to significant functional gait improvements and have carry-over effects on pain at the short term in osteoarthritis patients (<2 months).

Level of Evidence: level IV.

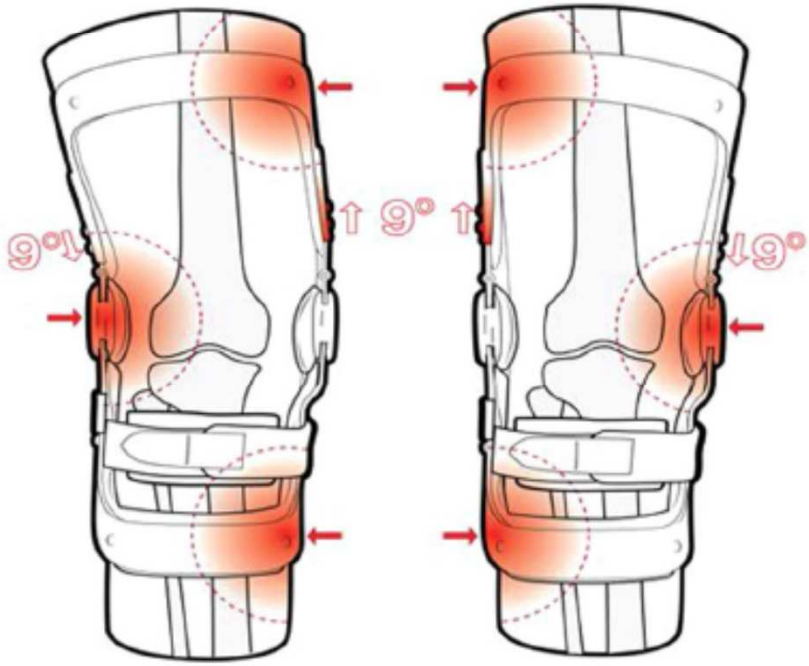
SCIENTIFIC REPORTS

OPEN

Effect of unloading brace treatment on pain and function in patients with symptomatic knee osteoarthritis: the ROTOR randomized clinical trial

Received: 28 November 2017
Accepted: 21 June 2018
Published online: 12 July 2018

Philippe Thoumie[1], Marc Marty[2,3], Bernard Avouac[3], Adeline Pallez[4], Arnaud Vaumousse[5], Linh Pham Thi Pipet[6], André Monroche[7], Nicolas Graveleau[8], Armand Bonnin[9], Cyrine Ben Amor[4] & Emmanuel Coudeyre[9]



Données à l'inclusion

	RebelReliever® (N=32)	Contrôle (N=35)
Femmes (%)	75	57.1
Age (années)	64.8 ± 11.7	66.6 ± 7.2
IMC kg/m²	29.2 ± 4.4	28.1 ± 5.1
Ancienneté de la pathologie (années)	8.4 ± 6.8	8.9 ± 7.4
Stade pathologique selon Kellgren-Lawrence (%)		
Grade II	31.3	20.0
Grade III	46.9	62.9
Grade IV	21.9	17.1
Douleur du genou sur les dernières 24 h (mm)	63.8 ± 10.6	64.7 ± 13.5
Douleur en mouvement (mm)	73.4 ± 12.7	71.9 ± 13.8
Etat fonctionnel (Index Lequesne [0-24])	13.4 ± 3.7	12.6 ± 3.2

Résultats: Douleur (EVA)

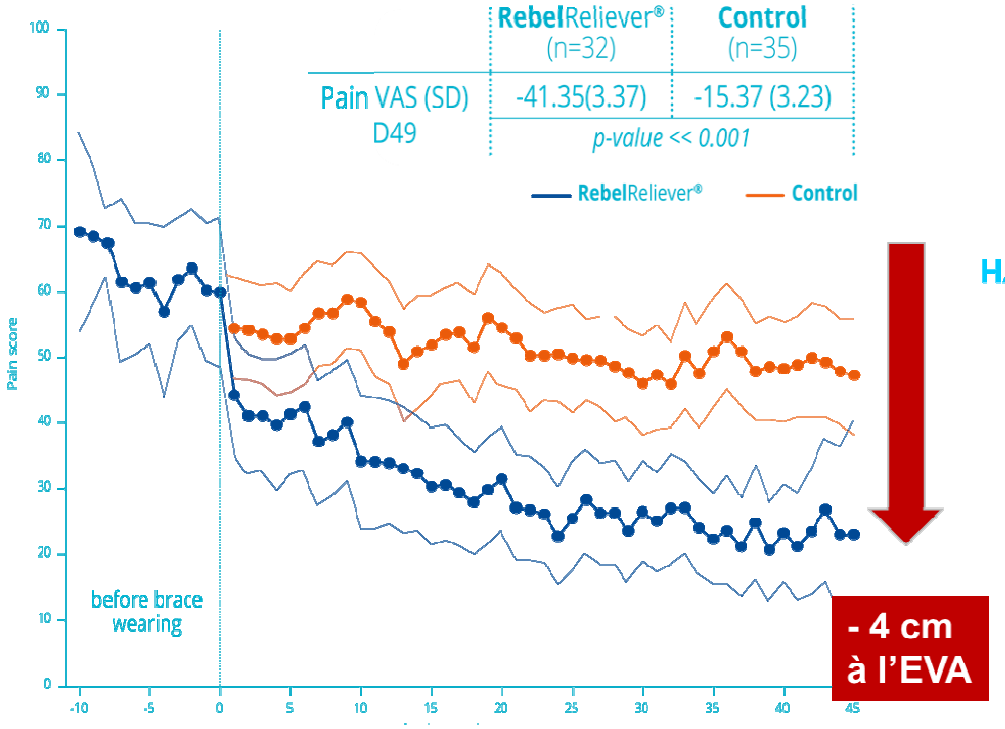
1st Endpoint	RebelReliever®	CONTROLE	Difference
Douleur dern. 24h (mm) *(moyenne;ET)*	- 41.35 (3.37)	-15.37 (3.23)	**-25.98 mm** (4.67)
IC 95%	[-52.66 ; -30.04]	[-26.18 ; -4.56]	[-41.64 ; -10.33]
P-value			**p<0,00135***

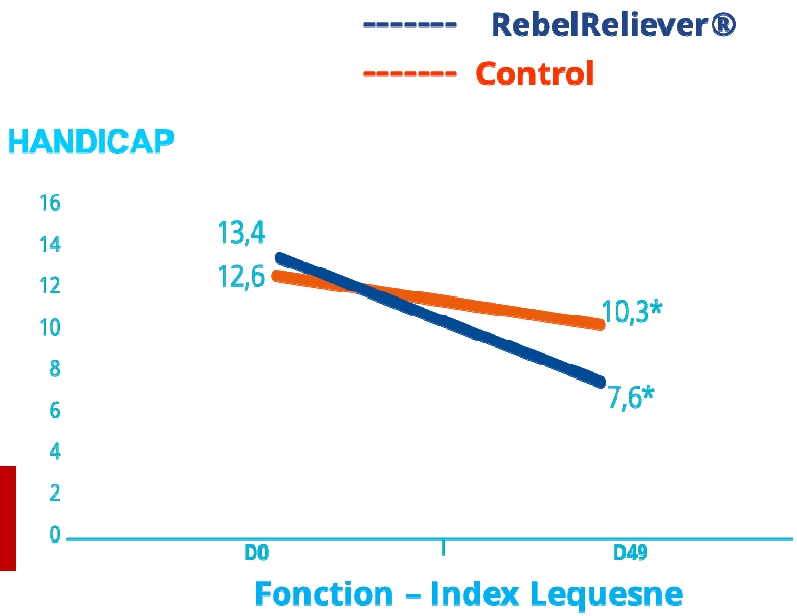
2nd Endpoint	RebelReliever®	CONTROLE	Difference
Douleur en mouvement (mm) *(moyenne;ET)*	- 51.91 (3.49)	-19.91 (3.34)	**-32.01 mm** (4.83)
IC 95%	[-63.62 ; -40.21]	[-31.10 ; -8.72]	[-48.21 ; -15.80]
P-value			**p<0,00135***

*Statistiquement significatif

Diminution significative de la consommation d'antalgiques/anti-inflammatoires

RÉSULTATS: EVOLUTION QUOTIDIENNE DE LA DOULEUR ET DE LA FONCTION





Types d’orthèses

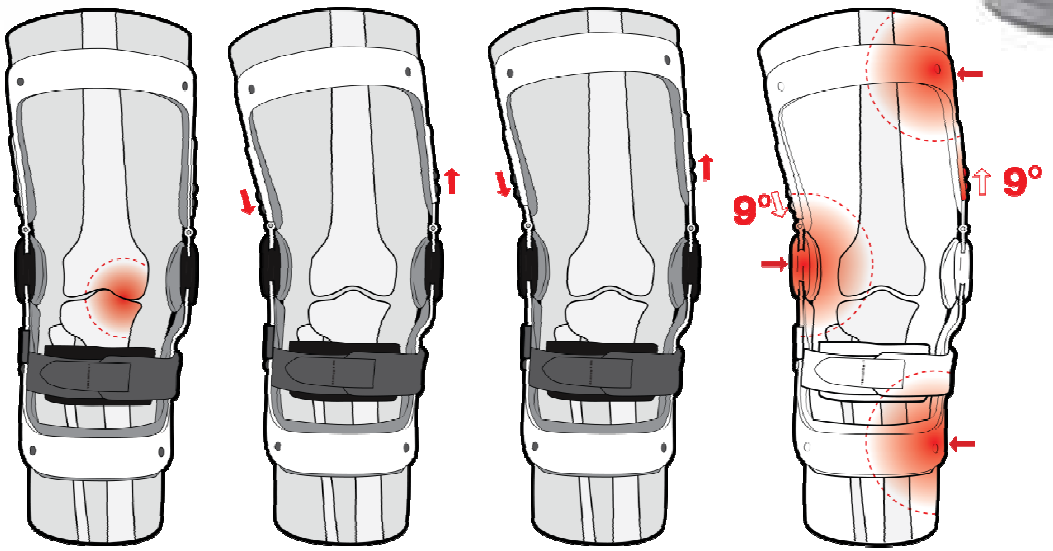
- Orthèse élastique simple

Contentions souples à visée rotulienne

Orthèses rotuliennes

Orthèse articulée de stabilisation

Orthèse valgisante / varisante de série



Orthèse valgisante / varisante de série avec moulage

Quel orthèse pour quel patient ?

Annals of Physical and Rehabilitation Medicine 61 (2018) 92–98

Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com

Original article

A decision-making tool to prescribe knee orthoses in daily practice for patients with osteoarthritis

Emmanuel Coudeyre [a,*], Christelle Nguyen [b,c,d], Aurore Chabaud [a], Bruno Pereira [e], Johann Beaudreuil [f], Jean-Marie Coudreuse [g], Philippe Deat [h], Frédéric Sailhan [i], Alain Lorenzo [j], François Rannou [b,c,d]

ABSTRACT

Objective: To develop a decision-making tool (DMT) to facilitate the prescription of knee orthoses for patients with osteoarthritis (OA) in daily practice.

Methods: A steering committee gathered a multidisciplinary task force experienced in OA management/clinical research. Two members performed a literature review with qualitative analysis of the highest-quality randomized controlled trials and practice guidelines to confirm evidence concerning knee orthosis for OA. A first DMT draft was presented to the task force in a 1-day meeting in January 2016. The first version of the DMT was criticized and discussed regarding everyday practice issues. Every step was discussed and amended until consensus agreement was achieved within the task force. Then 4 successive consultation rounds occurred by electronic communication, first with primary- and secondary-care physicians, then with international experts. All corrections and suggestions by each member were shared with the rest of the task force and included to reach final consensus. The final version was validated by the steering committee.

Results: The definition and indication of several types of knee orthoses (sleeve, patello-femoral, hinged or unicompartmental offloading braces) were detailed. Orthoses may be proposed in addition to first-line non-pharmacological treatment if patient acceptance is considered good. At every step, a specific clinical assessment is needed.

Discussion/conclusion: Based on the latest high-level evidence, practice guidelines, and an expert panel, a DMT to facilitate daily practice prescription of knee orthoses for OA patients was designed. An evaluation of DMT implementation in a wide range of health professionals is still needed.

SOINS PRIMAIRES SYMPTOMATIQUES

Diagnostic de gonarthrose

Information et éducation [1, 2]
Perte de poids (si nécessaire)
Exercices +/- supervisés

Traitement non pharmacologique de première intention

Réponse thérapeutique

INSUFFISANT

SUFFISANT

Acceptation d'une genouillère élastique *

NON

OUI

Evaluation clinique de la composante fémoro-patellaire

Absence de composante FP

Présence de composante FP

Genouillère neutre

Genouillère fémoro-patellaire

Réponse thérapeutique

NON

OUI

* Nécessité d'expliquer la mise en place de l'orthèse pour améliorer l'observance (élément clef de la réussite / échec à ce traitement)

SOINS SECONDAIRES

Traitement de deuxième intention

Analyse biomécanique de la gonarthrose [3]

Acceptation d'une genouillère à objectif biomécanique **

OUI

Prédominance fémoro-tibiale

Unicompartimentale

Orthèse de décharge unicompartimentale

Bicompartimentale

Instabilité*** NON

OUI

Orthèse articulée de stabilisation

Mixte

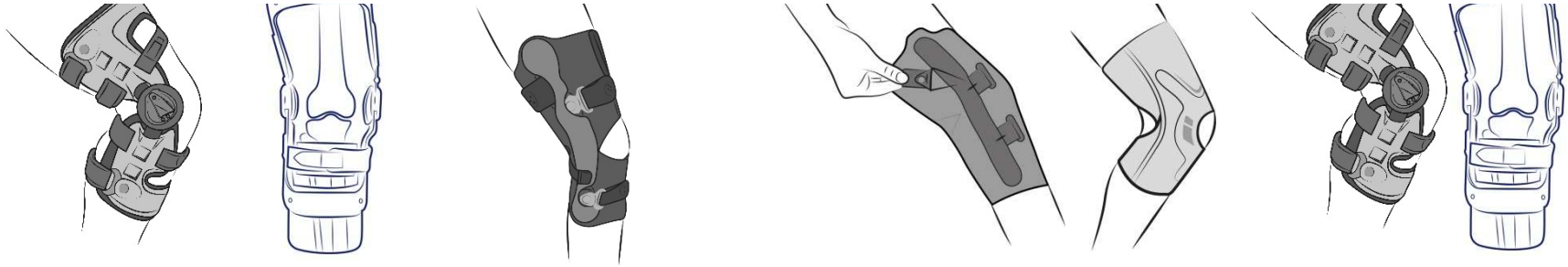
Traitement en fonction du compartiment le plus symptomatique

Fémoro-patellaire

Orthèse fémoro-patellaire

Fémoro-tibial

Orthèse de décharge unicompartimentale



** L'analyse biomécanique de la gonarthrose comprend les items suivants :
- Topographie des douleurs et/ou de l'arthrose
- Troubles de la statique fémoro-tibiale (varus ou valgus) et/ou fémoro-patellaire
- Réductibilité de la déformation
- Instabilité fémoro-tibiale ou fémoro-patellaire

*** Auto-évaluation par le patient (le genou se dérobe)

Discussion

- Outil d'aide à la décision ≠ algorithme
- Nécessité de
  - validation prospective en ouvert, en consultation en soins 1res et 2res
  - évaluation de l'implémentation auprès d'un large panel de professionnels
  - Prise en compte de l'avis des patients
- Impact qualitatif et quantitatif sur la prescription ?
- Rôle pédagogique

Conclusion

- Sous prescription des orthèses dans la gonarthrose
- Intérêt potentiel (biomécanique > clinique)
- Freins et leviers à la prescription(patients/thérapeutes)
- Déterminer les profils patients (répondeurs/adhérents)