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Commentary on recent therapeutic guidelines for osteoarthritis

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ABSTRACT

Background: Despite availability of international evidence-based guidelines for osteoarthritis (OA) management, agreement on the different treatment modalities is lacking.
Method: A symposium of European and US OA experts was held within the framework of the Annual European Congress of Rheumatology to discuss and compare guidelines and recommendations for the treatment of knee OA and to reach a consensus for management, particularly for areas in which there is no clear consensus: non-pharmacological therapy; efficacy and safety of analgesics and non-steroidal anti-inflammatory drugs (NSAIDs); intra-articular (i.a.) hyaluronates (HA); and the role of chondroitin sulfate (CS) and/or glucosamine sulfate (GS).
Results: All guidelines reviewed agree that knee OA is a progressive disease of the joint whose management requires non-pharmacological and pharmacological approaches. Discrepancies between guidelines are few and mostly reflect heterogeneity of expert panels involved, geographical differences in the availability of pharmacotherapies, and heterogeneity of the studies included. Panels chosen for guideline development should include experts with real clinical experience in drug use and patient management. Implementation of agreed guidelines can be thwarted by drug availability and reimbursement plans, resulting in optimal OA treatment being jeopardized, HA and symptomatic slow-acting drugs for osteoarthritis (SySADOAs) being clear examples of drugs whose availability and prescription can greatly vary geographically. In addition, primary care providers, often responsible for OA management (at least in early disease), may not adhere to clinical care guidelines, particularly for non-pharmacological OA treatment.
Conclusion: Harmonization of the recommendations for knee OA treatment is challenging but feasible, as shown by the step-by-step therapeutic algorithm developed by the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO). More easily disseminated and implemented guidance for OA treatment in the primary care setting is key to improved management of OA.

Introduction

Osteoarthritis (OA) has been defined as "a progressive disease of synovial joints that represents failed repair of joint damage that results from stresses that may be initiated by an abnormality in any of the synovial joint tissues, including articular cartilage, subchondral bone, ligaments, menisci (when present), periarticular muscles, peripheral nerves, or synovium" [1]. Even if OA can involve single and/or multiple peripheral joints, including the knee, hip, and hand [2], the knee is the most common joint localization of symptomatic OA [3].

While diagnosis of OA is mainly based on clinical and radiological features [4], pain represents the first and prevailing symptom that leads patients to seek medical advice. Stiffness is generally linked to physical inactivity, while loss of movement and function can limit the patient's daily activities. Symptomatic OA is often associated with depression and disturbed sleep, greatly reducing patients' quality of life [2].

The current treatment of OA is based on symptom management, primarily pain control, and relies on the combination of non-pharmacological and pharmacological approaches that are

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generally tailored to the patient's needs and risk factors. While several international professional societies have published evidence-based guidelines for OA management [5–11], no complete agreement on the different treatment modalities exists, highlighting the need for a debate to try to understand the differences and to develop a general consensus for disease management.

A symposium devoted to the recent therapeutic recommendations for OA management was held on June 12, 2014, in the framework of the 2014 Annual European Congress of Rheumatology to review, compare, and discuss the most important guidelines and recommendations for the treatment of knee OA published by the European League Against Rheumatism (EULAR), the Osteoarthritis Research Society International (OARSI), the American College of Rheumatology (ACR), and the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO).

This article summarizes the comparisons of the guidelines for knee OA treatment regarding four specific topics: the non-pharmacological therapy of knee OA, efficacy and safety of analgesics and non-steroidal anti-inflammatory drugs (NSAIDs), intra-articular hyaluronates, and the role of chondroitin sulfate (CS) and/or glucosamine sulfate (GS) in the management of knee OA for which no clear cut consensus is available.

The non-pharmacological therapy of knee osteoarthritis

Table 1 presents the recommendations for non-pharmacological treatments issued over the past 10 years. The different recommendations rely on evidence from both systematic reviews and randomized clinical trials (RCTs), with the main outcomes considered being pain and physical function. While in patients with knee OA the most agreed non-pharmacological modalities are patient access to information and education, weight loss, and exercise programs, debate continues regarding the limited effects of these approaches on early symptoms; their feasibility in a long-term perspective, including the potential for disease modification; and their real effect size (ES) on pain and joint function. In fact, the ES of these non-pharmacological treatment modalities is generally low if used as stand-alone treatments; still, it must be remembered that these interventions are relatively inexpensive and generally devoid of side effects.

Information access and education, self-management programs, and changes in patient lifestyle should be introduced as early as possible, with the aim being to provide patients with the knowledge of their disease and objectives of the treatment. In fact, these simple measures have been demonstrated to have a great impact on further adherence to treatment [5]. Comprehensive guidance on the principles of information and education and lifestyle changes has been recently published [6]. A 5% weight loss within 6 months produces a small but significant benefit on physical function [5,12] and is therefore highly recommended for overweight patients. OARSI recommendations reported in 2007 specified the ES of the different non-pharmacological modalities [13], but only a few displayed moderate ES values (aerobic exercise and thermal modalities) (Table 1). Exercise (cardiovascular or resistance) was one of the "strong recommendations" for knee OA non-pharmacological treatment from the ACR [7]. Both land- and water-based exercise reduce pain and disability in patients with knee OA [14]. While it has been stated that the intensity and/or duration of the exercise should increase over time [6] for more prolonged beneficial effects, the optimal exercise regimen has not been identified yet. Experts agree that regular aerobic exercise, quadriceps strengthening, and strength training of the lower limb should be recommended to patients as a mixed-approach program [14]. In the recently released ESCEO algorithm for the management of OA [5] it is stated that, after the initial core set assessment, all patients should be referred to a physical therapist for advice on the possible physical measures to be adopted by the patients for

Table 1
Recommendation for the non-pharmacological treatment of knee osteoarthritis (OA)

	Type of non-pharmacological treatment	Type of recommendation/evidence/ES[a]	Refs.
EULAR (2003)	Regular education, exercise, appliances (sticks, insoles, and knee bracing), and weight loss.	Recommended	[8]
OARSI (2007 and 2008)	Regular aerobic, muscle strengthening, and different range of motion exercises. For pts with symptomatic hip OA, exercises in water can be effective.	Pain ES = 0.52 (aerobic), = 0.32 (strength)	[13, 45]
	Some thermal modalities may be effective for relieving symptoms.	Pain ES = 0.69 (−0.07, 1.45)	
	Acupuncture may be of symptomatic benefit in pts with knee OA.	Pain ES = 0.51 (0.23–0.79)	
OARSI (2010)	Acupuncture	ES = 0.52	[11]
ACR (2012)	Cardiovascular (aerobic) and/or resistance land-based exercise, aquatic exercise, and weight loss if overweight.	Strongly recommended	[7]
	Self-management programs, use of thermal agent and manual therapy with supervised exercises, tai chi programs, and use of walking aids.	Conditionally recommended	
EULAR (2013)	Overall, 11 recommendations were provided concerning the assessment, general approach, patient information and education, lifestyle changes, exercise, weight loss, assistive technology and adaptation, footwear, and work.	Level of evidence ranging from Ia to III	[6]
OARSI (2014)	Core treatment (land-based exercise, strength training, weight management, self-management, education, and water-based exercise).	Appropriate for all patients (land-based exercise: Pain ES = 0.34–0.63, Function ES = 0.25; strength training: Pain ES = 0.38, Function ES = 0.41; weight management: Pain ES = 0.20, Function ES = 0.23; and self-management and education: Pain ES = 0.06–0.29, Function ES = 0.41)	[9]
	Cane (walking stick).	Appropriate for knee OA	
ESCEO (2014)	Core set information education, weight loss if overweight, and exercises program including aerobic and strengthening.	Recommended for all patients	[5]

ACR, American College of Rheumatology; ES, effect size; ESCEO, European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis; EULAR, European League Against Rheumatism; OA, osteoarthritis; OARSI, Osteoarthritis Research Society International; pts, patients.

[a] ES, effect size is a standardized mean difference between a treatment and a control group for an outcome variable, i.e., pain and function.