**MEDICAL KNOWLEDGE GAPS IN MODERATE-TO-SEVERE OSTEOARTHRITIS TREATMENT: A CLINICAL PRACTICE ASSESSMENT**

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## AIM

Osteoarthritis (OA) pathogenesis involves inflammatory mechanisms that cause joint tissue degradation and remodeling as well as joint pain. Clinical practice guidelines advocate pharmacologic treatment targeting pain relief and improvement of joint function with corticosteroids/NSAIDs and lifestyle changes, including weight loss. Supplements, eg, chondroitin, glucosamine, and Traumeel/Zeil, are being used increasingly despite often limited clinical evidence.

A CPD-certified online Clinical Practice Assessment (CPA) was created to evaluate the current knowledge of orthopedists and rheumatologists on the role of inflammation in OA pathophysiology and key clinical data, current guidelines, and treatment approaches in moderate-to-severe OA.

## METHODS

The CPA consisted of 20 multiple-choice questions on patient case histories (4/20), which were designed to be the most challenging questions for participants. OA pathogenesis (2/20), current guidelines such as American College of Rheumatology (ACR),

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 European League Against Rheumatism (EULAR),

 Osteoarthritis Research Society International (OMSRI),

 National Institute for Health and Care Excellence (NICE),

 American Academy of Orthopaedic Surgeons (AAOS),

 and European Society for Clinical and Economic Aspects of Osteoarthritis and Osteoporosis (ESCEO)(4/20), clinical trial data(16/20), and current and future clinical OA management strategies (4/20). Three additional questions collected demographic data on participants. The CPA was provided online to healthcare providers without monetary compensation. Immediately after responding to each question, participants were given the correct answer, along with supporting evidence to facilitate learning. Data from 430 orthopedists and 183 rheumatologists who completed the CPA between 26, 2016, and September 5, 2016, were analyzed. Participant confidentiality was maintained and responses were de-identified and aggregated prior to analyses.

## RESULTS

37% of orthopedists and 42% of rheumatologists who participated had been practicing for 20 or more years. Among orthopedists and rheumatologists, 39% indicated approximately 11% to 25% of their patients have knee OA. With respect to OA pathophysiology, 13% of orthopedists and 22% of rheumatologists correctly chose that high bone-mineral density is associated with an increased OA development risk.

Recent studies have suggested a role for a number of pro-inflammatory transcription factors, kinases, and cytokines in the pathogenesis and progression of OA. Which of one of the following markers and mediators of inflammation has been implicated in OA?

**FIGURE 1**

While almost half of rheumatologists (44%) knew that topically capsaicin was recommended for treatment of knee hip OA by the NICE guidelines, orthopedists were less familiar with these guidelines. The majority of orthopedists (85%) stated that NICE had recommended intraarticular hyaluronic acid. More than one-third of rheumatologists (36%) also stated incorrectly that intraarticular hyaluronic acid was recommended in the NICE guidelines.

**FIGURE 2**

A 2014 Cochrane review noted that land-based exercise for treatment of hip osteoarthritis improved physical function and reduced pain. These benefits were sustained for at least how long after the completion of the various exercise programs?

**FIGURE 3**

The bioavailability of different application forms of the biologics has been determined. Which of the following biologics is not associated with a high or moderate risk of injection site reactions:

**FIGURE 4**

Very few participants of either specialty were familiar with these findings. Only 15% of orthopedists and 16% of rheumatologists answered correctly that the study showed that the prevalence of “any abnormality” in the bilateral knees among postmenopausal women aged ≥50 was 89% with no radiographic evidence of disease. Which of the following statements correctly reports the findings of this study?

**FIGURE 5**

The majority of orthopedists (85%) and rheumatologists (87%) were unfamiliar with the recent guidelines developed by the European Society for Clinical and Economic Aspects of Osteoarthritis and Osteoporosis (ESCEO) for the treatment of knee OA. 47% of orthopedists and 43% of rheumatologists correctly answered questions on the IDEAS study, on the Cochrane Review, on intraarticular injections for knee OA (71% and 70%, respectively), and on the Mozart study(17) with Tramadol (43% and 43%, respectively), but fewer were familiar with data on land-based exercises for hip OA. These results are shown in figures 4 and 5, respectively.

**FIGURE 6**

A case history question was developed on the potential benefit of vitamin C in reducing the progression of knee OA, which is described in Figure 7.

**FIGURE 7**

This educational research on medical knowledge and patient care practices of specialist OA clinicians yielded important insights into clinical gaps in their knowledge, skills, attitude, and competence in the clinical evaluation and treatment of patients with moderate-to-severe OA. Knowledge gaps were identified in 4 areas:

- The role of inflammation in OA pathogenesis
- OA management with pharmacologic therapy and supplements according to guidelines and current clinical evidence
- The bioavailability of different application forms of OA therapies
- The role of other interventions

This assessment also highlighted barriers in the clinical evaluation, diagnosis, and treatment of patients with moderate-to-severe OA, reflected in the recently reported clinical deficiencies of OA guideline interpretation.2

There is a need and opportunity for further education of clinicians to improve the clinical management of OA.

## CONCLUSION

In summary, this activity was designed in such a way that participants were expected, upon completion, to be able to describe the latest concepts in OA pathophysiology, with a consideration of the role of inflammation in OA and to evaluate current data and guidelines recommendations on current treatment approaches in moderate-to-severe OA. The educational gaps identified could then be addressed in future initiatives.

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