REGULATION AND GUIDELINE

Diagnosis and Management of Knee Osteoarthritis: 

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ABSTRACT  Literature review shows that Chinese medicine and other related treatment are still the main 
stream treatment of knee osteoarthritis. Currently, there is short of handbook guiding Chinese medicine from 
evidence-based medical evidence, so it is a top priority to develop a clinical guideline from the expert consensus. 
After several rounds of discussion during the conference and examination by letter, which has collected opinions 
from nearly one hundred experts, consensus was reached. Nonpharmacologic interventions include health 
education, medical exercise, acupuncture, massage, acupotomology, and physiotherapy. Pharmacological 
interventions are as follows. Topical application includes fumigation, application, hot compressed, ironing and 
iontophoresis with Chinese herbs, etc. Chinese patent medicine for external use includes plaster, ointment, 
etc. Western medicine for external use mainly includes emulsion, ointment, plaster and embrocation containing 
nonsteroidal anti-inflammatory drugs (NSAIDs). Intraarticular injection mainly includes sodium hyaluronic acid, 
chitosan (for injection) with prudent use of glucocorticoid. Chinese herbal medicine and Chinese patent medicine 
can be taken referring to syndrome differentiation which mainly includes syndromes of qi stagnation and 
blood stasis, cold dampness, deficiency of Gan (Liver) and Shen (Kidney), deficiency of qi and blood. Western 
medicine mainly includes analgesic, NSAIDs, diseases modifying drugs. Surgery procedures mainly include joint 
irrigation, arthroscopic surgery, osteotomy, arthroplasty, etc. 

KEYWORDS  knee osteoarthritis, Chinese medicine, integrative medicine, expert opinion

Knee osteoarthritis (KOA) is a common disease. The treatment of the disease through orthopedics and 
traumatology from Chinese Medicine (CM) displayed improved results over other methods. According to 
the literature review from China National Knowledge Infrastructure and Wanfang Data, common treatments 
of osteoarthritis include: CM, sodium hyaluronate, arthroscopic surgery, acupuncture, acupotomology, 
arthroplasty, massage, osteotomy, joint-irrigation and physiotherapy. CM and other related treatments are 
still the most common treatments for osteoarthritis. A comprehensive treatment system was developed 
for KOA through CM and combining acupuncture, massage and function exercise methods, etc. The 
combination treatment has the unique advantages of utilizing various treatment methods, displaying reliable 
curative effect, maintaining a low treatment cost, with less adverse reactions. (1)

However, even as a main-stream treatment of KOA, CM fails to satisfy a number of KOA 
and National Institute for Health and Care Excellence (NICE) (3) does not even recommend the use of 
acupuncture and massage therapy for KOA. The incompatibility of the Chinese and Western medical 
concept, inability to find a suitable clinical research methods to study CM, lack of high-quality randomized 
controlled studies, the low reliability of previous research results, and difficulties in replicating the 

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treatment methods and results are all grounds for the lack of recognition of CM within Western medicine.

As society continues to advance and the expectations of doctors and patients continue to increase, guidelines and expert opinions are becoming increasingly important. These expert opinions are often considered as principles of standard medical behavior. In some cases, these opinions become the basis of medical insurance claims and medical lawsuit trials. Based on the current research development of KOA, it is difficult to formulate evidence-based clinical guidelines in the near future. Therefore, it has become a top priority to develop a safe, effective and feasible clinical guideline from the expert consensus that utilizes the integration of CM and Western medicine.

Diagnosis and Classification of KOA

KOA is diagnosed based on the 1995 American College of Rheumatology standards: (1) recurrent knee pain in the past month; (2) radiographic X-ray (standing or weight-bearing) indicating the narrow joint space, subchondral bone sclerosis and/or cystic degeneration, and joint edge osteophyte formation; (3) clear, ropy joint fluid (at least 2 times), white blood cell count <2,000/mL; (4) age >40 years; (5) morning stiffness <30 min; (6) crepitus on motion. Patient is diagnosed with KOA if they have either a combination of conditions 1 and 2 or conditions 1, 3, 5 and 6 or conditions 1, 4, 5 and 6.

Classification of KOA references Kellgren-Lawrence's grading scale. Grade 0: no radiographic features of osteoarthritis; Grade 1: possible formation of osteophyte and narrowing of joint space; Grade 2: definite osteophyte formation and possible joint space narrowing; Grade 3: obvious osteophytes, obvious narrowing of joint space, sclerosis and possible bony deformity; Grade 4: large osteophytes, definite narrowing of joint space, severe sclerosis and definite bony deformity.

Progression of Various Types of KOA

Symptomatic phase: moderate, severe or persistent joint pain; joint swelling, functional limitations, and limp or loss of joint mobility. Symptomless phase: mild joint pain, pain aggravated when tired, weather variations or complaining of soreness and acratia, or with limited joint mobility.

Different syndromes of KOA refer the “Guidelines for diagnosis and treatment of common disease based on orthopedics and traumatology of traditional Chinese medicine” (Table 1).5

Management of KOA

Nonpharmacologic Interventions

Health Education

To provide pain relief, manage the symptoms and delay the progression of the disease, patients should understand their conditions from their doctor and routinely perform moderate exercises.

Medical Exercise

The following exercises under supervision are recommended: straight leg raises, jogging, cycling, swimming, Tai Chi and Ba Duan Jin exercise.

Acupuncture

Milli-needles, pricking blood and cupping, warm needling and moxibustion are all recommended. The acupuncture treatments should be utilized in combination of local point and acupoints along channel. Commonly used acupoints include Xuehai (SP 10), Xiyan (EX-LE 4), Weizhong (BL 40),

| Syndrome Primary symptom Secondary symptom Tongue and pulse characteristic |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Qi stagnation and blood stasis Joint pain as if being prodded, aggravated after resting Darkish complexion Dark purple tongue, or with ecchymosis; sunken and astringent pulse |
| Cold dampness Severe joint pain, aggravated by cold weather, and alleviated by warm weather Heavy pain around the waist Pale tongue, white and greasy texture; deep pulse |
| Deficiency of Gan (Liver) and Shen (Kidney) Joints with dull pain Soreness and weakness of the waist and knees, pain aggravated when tired Red tongue, scanty coating; thin and weak pulse |
| Deficiency of both qi and blood Uncomfortable joints soreness and pain Insomnia, sleepiness, sweating, dizziness, palpitations, and lusterless complexion Pale tongue, thin-white coating, weak pulse |