

Dynamic Wedging Relieves Pain in Knee Osteoarthritis

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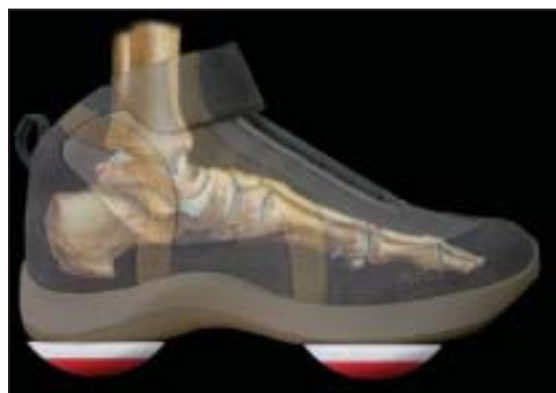
PRAGUE — Individually calibrated shoes that provide dynamic wedging can significantly improve pain and function in patients with knee osteoarthritis—sometimes immediately, Dr. Yuval Ran reported at the 2006 World Congress on Osteoarthritis.

“We have clearly demonstrated clinical efficacy. Immediate relief of pain in some patients enabled them to walk painlessly during real-life activity thus reacquiring neuromuscular skills and balance,” he said at the meeting, which was sponsored by the Osteoarthritis Research Society International.

Dr. Ran, from the Assaf Harofeh Medical Center in Tel Aviv, has been treating patients with footwear from APOS Medical and Sports Technologies Ltd. (Herzliya, Israel) for about 2 years, he said, adding that he has no conflict of interest to disclose.

Unlike other active osteoarthritis (OA) interventions, which usually require intensive physical therapy programs and result in low compliance, the APOS system, which involves semispherical, individually calibrated implants in special footwear, often relieves pain immediately and thus results in extraordinary compliance, he said. “Many patients wear the shoes all the time because we can’t instruct them not to wear something that relieves pain,” he said, noting that the implants are designed to improve age-related loss in neuromuscular control and resulting muscle-weakness and stress on the knee joint.

The semispherical rubber devices that are placed on the soles of the shoes at the hindfoot and midfoot can move medially and laterally and may be individually adjusted in order to balance loading, he explained.



Semispherical rubber devices at the hindfoot and midfoot can be adjusted to balance loading.

In a randomized trial of 61 patients who had knee osteoarthritis (mean age, 66 years) who were treated for 8 weeks with the APOS implants or placebo, Dr. Ran and his colleagues noted a “highly significant” 70% decrease in pain in the treated group, measured with the Western Ontario and McMaster Universities Osteoarthritis (WOMAC) index and a 33% improvement in function according to the Aggregated Locomotor Function (ALF) scale, compared with no improvements in the control group.

Patients were advised to start the treatment with 10 minutes of indoor wear, building up to 30 minutes of outdoor walking—however, he said the majority of patients chose to wear the shoes most of the time because of the pain relief provided. Evaluation was performed at baseline, 4 weeks, and 8 weeks.

The patients also were supervised four times during the study to make adjustments to the shoes, if necessary. Patients in the placebo arm wore shoes that looked identical except without the spheres on the soles. ■

Everyday Shoes May Step Up Osteoarthritis Risk

PRAGUE — In patients with osteoarthritis—and even in healthy subjects—standard walking shoes result in significantly more knee adduction compared with barefoot walking or walking with a specially designed “unloading” shoe, Dr. Najia Shakoor reported in a poster at the 2006 World Congress on Osteoarthritis.

“High [dynamic] loading has been associated with both the presence and progression of OA,” said Dr. Shakoor in an interview, noting that increased loading results in increased adduction. In light of these findings, “in normal individuals, closer examination of the design and biomechanical effects of modern footwear on lower-extremity joint loading is warranted, both in healthy individuals who may be at risk for OA as well as [in] those with established OA.”

In a previous study, Dr. Shakoor and colleagues from Rush Medical College, Chicago, showed that in subjects with knee OA, walking barefoot significantly decreases peak external knee adduction compared with walking in standard walking shoes (Arthritis Rheum. 2006;54:2923-7). The group subsequently designed a shoe to mimic the unloading characteristics of barefoot walking

and tested it in a cohort of 26 healthy subjects.

The 18 females and 8 males, with a mean age of 42 years, received gait evaluations while wearing their self-selected normal walking shoes. All of the subjects also had a gait analysis while walking barefoot, and 19 were analyzed while they wore the specially designed unloading shoes.

“The shoes are very flat and thin-soled, with a soft upper that wraps around the foot like a glove,” Dr. Shakoor said. “There are slit lines in the sole to conform to the major natural flexion points of the foot.”

Although a provisional patent has been filed and the group hopes that the shoes will eventually be marketed as a therapeutic intervention, they do not currently have any company affiliations.

Overall, a significant 13% reduction in subjects’ external knee adduction was noted during their walking while barefoot and with the unloading shoes, compared with walking in their normal walking shoes. The researchers also have data showing similar unloading effects of the shoes in patients with OA, Dr. Shakoor said at the conference, which was sponsored by the Osteoarthritis Research Society International. ■

First International Osteoarthritis Guidelines to Target Knee, Hip

PRAGUE — The first international recommendations for the treatment of knee and hip osteoarthritis are expected to be announced within the next few months, according to the committee that drafted the guidelines.

“We hope these recommendations will target both primary care physicians and specialists, as well as allied health professionals,” said Dr. George Nuki, cochair of the guideline committee, and professor at the University of Edinburgh. “Publication is expected in two parts in Arthritis and Cartilage in the first quarter of 2007,” said Dr. Nuki at the 2006 World Congress on Osteoarthritis.

The guidelines were drafted by 16 experts drawn from rheumatology, primary care, orthopedics, and evidence-based medicine from six countries. These represent the first international guidelines on knee and hip osteoarthritis and are intended to be more broadly based than are the existing guidelines, said Dr. Roland Moskowitz, the other cochair of the committee and professor of medicine at Case Western Reserve University, Cleveland.

“We intend the guidelines to be universally applicable. We have evaluated treatments regardless of cost, and they can be universally applied according to different countries’ health care systems,” Dr. Moskowitz said in an interview at the meeting, sponsored by the Osteoarthritis Research Society International.

The committee drafted a list of 34 recommendations, he said. There is 1 general recommendation suggesting that “optimal management of patients with OA of the hip

and knee requires a combination of nonpharmacological and pharmacological modalities of treatment in most patients and surgery in some,” followed by 14 nonpharmacologic, 12 pharmacologic, and 7 surgical recommendations for treatment.

The draft of the proposed guidelines involved a systematic review of existing literature, said Dr. Nuki. The quality of evidence was evaluated and, when possible, outcome data for efficacy, adverse effects, and cost-effectiveness were abstracted. The effect size, number needed to treat, relative risks or odds ratio, and cost per quality of life years gained were estimated. Draft recommendations were produced following a Delphi exercise, based on a critical appraisal of the literature and the clinical expertise of the committee, he explained.

Nonpharmacologic therapies proposed included education of patients, changes in lifestyle, exercise, weight reduction, walking aids, patellar taping, modified footwear, knee braces, acupuncture, and transcutaneous electrical nerve stimulation.

Proposed pharmacologic treatments included acetaminophen (up to 4g/day) as the preferred first-line therapy. Alternative or additional analgesics to be considered for nonresponders included NSAIDs at the lowest effective dose, topical NSAIDs or capsaicin, and intra-articular injections of corticosteroids or hyaluronans.

The choice of treatments should be based on comorbidities, concomitant medication, and relative efficacy and safety, according to the proposed guidelines. In patients with increased GI risk, a cyclooxygenase-2 (COX-2) selective agent or a nonselective NSAID with a proton pump inhibitor or misoprostol for gastroprotection may be considered, but NSAIDs—including COX-2-selective agents—should be used with caution in

patients with cardiovascular risk, the committee noted. Although chondroitin and glucosamine sulfate may provide some symptomatic benefits in patients who have knee OA, the use of opioid analgesics should be considered for the treatment of severe or refractory pain only when other agents are ineffective or contraindicated.

And finally, consideration of joint-replacement surgery was proposed for patients who do not receive adequate relief from pharmacologic and nonpharmacologic treatments, according to the draft recommendations.

After the finalized recommendations have been published, the organization hopes to encourage implementation of the guidelines in both primary- and secondary-care settings, said Dr. Nuki.

“We intend to revise them as new evidence emerges, with a full review planned in 2010,” he said. The guidelines are available at www.oarsi.org. ■

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