

Strapped Insole Improves Knee Osteoarthritis Pain

BY PATRICE WENDLING
Chicago Bureau

CHICAGO — Use of a laterally wedged insole with strapping of the subtalar joint can improve pain and correct abnormal biomechanics due to varus alignment in medial compartment osteoarthritis of the knee, Yoshitaka Toda, M.D., said at the 2004 World Congress on Osteoarthritis.

The idea is that an insole can correct varus alignment by creating valgus correction, resulting in a reduction of medial knee joint surface loading, said Dr.

Toda, who has an orthopedic rheumatology practice in Osaka, Japan.

Previous attempts to achieve such a correction with a shoe insert haven't been successful, he said, perhaps because of movement of the talus.

Instead, an insole that's fixed in place with subtalar strapping prevents the talus from moving and creates tension to correct the femorotibial angle, he explained.

In a study designed to assess the optimal daily usage of the device, which was developed and patented by Dr. Toda, 81 women with knee osteoarthritis were

randomly assigned to wear the insole for less than 5 hours a day (short group), between 5 hours and 10 hours (medium group), for more than 10 hours (long group), or to wear a placebo subtalar strapping band without the wedge insert. Both of the groups were treated for 2 weeks.

All patients also were treated with oral NSAIDs twice a day as adjunctive therapy. There were no differences between groups in terms of age, disease duration, body mass, height, or femorotibial angle.

All patients with varus knee osteoarthritis who wore the or-

thotic device daily had a significantly greater valgus correction of the femorotibial angle on standing radiographs than did patients in the placebo group.

The average time spent actually wearing the device was 3.5 hours in the short group, 6.9 hours in the medium group, and 14.2 hours in the long group, according to patient diaries.

The optimal time for wearing the device appears to be between 5 and 10 hours a day, Dr. Toda said at the congress, which was sponsored by the Osteoarthritis Research Society International.

In the short, medium, and long groups, the femorotibial angle was reduced by an average of 2.4 degrees, 2.2 degrees, and 2.5 degrees, respectively. The femorotibial angle in the placebo group increased by 1.8 degrees.

Pain remission scores on the Lequesne Functional Severity Index at 2 weeks were significantly improved from baseline in the medium group (-5.9) compared with the placebo (-1.9) and long groups (-2.3). The short group score was -4.6.

Maximum improvement on the severity index occurred among pa-

tients who wore the device for 8 hours per day, Dr. Toda said.

"A possible reason for the reduced improvement in the long group might be that the continuing reduction in the femorotibial angle resulted in fatigue of surrounding muscles, which had been compensating for the deformity," Dr. Toda said.

The poor results in the placebo group suggest that the improvements seen in patients wearing the device for 5-10 hours were due to changes in the femorotibial angle and not to the effects of NSAIDs.

The insole offers a possible alternative for patients with knee osteoarthritis who are hesitant to undergo pharmacologic or surgical treatment, Dr. Toda added. Follow-up studies are planned to determine if the device alters or delays OA progression.

Patients would be wise to consult their physicians before using devices such as Dr. Toda's, said Neil Segal, M.D., of the department of orthopedics and rehabilitation at the University of Iowa, Iowa City. "We're still studying the biomechanics of what leads to OA," he said.

This device may help patients with medial compartment OA who have varus forces on that compartment. But it won't help patients with lateral compartment OA, and it might even make them worse. ■



The femorotibial angle, formed by the axes of the femur and tibia, before treatment with the insole.



After treatment with the strapped insole, the femorotibial angle was reduced by about 5 degrees.



The insole is secured with straps around the subtalar joint, preventing the talus from moving.

Waist Circumference Predicts Knee OA in Men

BY PATRICE WENDLING
Chicago Bureau

CHICAGO — Waist circumference appears to be an important and previously unrecognized indicator of knee osteoarthritis risk in men, Lauren M. Abbate reported at the 2004 World Congress on Osteoarthritis.

Men with a waist circumference greater than 108 cm were twice as likely to have knee osteoarthritis (OA) than were men with a waist circumference less than 95 cm, according to findings from the Johnston County Osteoarthritis Project, which involved a randomly selected group of 849 women and 458 men from Johnston County in North Carolina.

Among women there was a stronger association between body mass index (BMI) or weight and knee OA compared with men, added Ms. Abbate, an epidemiology doctoral student at the University of North Carolina at Chapel Hill.

Large waist circumference among women was associated with an increased risk of knee OA in the study, but not independently of BMI. This finding is similar to data reported from the population-based Chingford Study.

Previous OA studies have shown that

the effect of BMI differs by gender, but have not evaluated the effect using measures of body fat distribution or composition.

Investigators at UNC's Thurston Arthritis Research Center assessed body composition using dual-energy X-ray absorptiometry (DXA), and assessed body fat distribution using waist and hip circumferences. Radiographic knee OA was defined as a Kellgren-Lawrence grade of 2 or more.

The mean age of the participants was 65 years for both men and women; 27% of the women and 16% of the men were African American.

In women, the mean BMI was 30 kg/m² and mean weight was 77 kg, and in men, mean BMI was 29 kg/m² and mean weight 89 kg.

Body composition variables associated with higher odds of knee OA in women included fat mass (OR 4.47), percent fat mass (OR 3.25), and lean mass (OR 3.18).

By contrast, in men, waist circumference was the only variable significantly associated with the knee OA (2.47). Waist size was also significantly associated with the disease in women (OR 4.33).

Waist-to-hip ratio was not significantly associated with knee OA in women (OR

1.56) or men (OR 1.21). After adjustment for BMI, none of the associations with body composition or body fat distribution variables and knee OA in women remained significant. Waist circumference in men, however, remained a statistically significant predictor of knee OA (OR 3.46).

The findings underscore the importance of weight management for OA, particularly among women, Ms. Abbate said at the meeting, which was sponsored by the Osteoarthritis Research Society International.

Waist circumference in men is a previously overlooked risk factor for knee OA, above and beyond BMI, senior author and UNC associate professor of medicine Joanne M. Jordan, M.D., told this newspaper.

"This study suggests that in women, BMI is highly associated with radiographic knee osteoarthritis, and that other measures of obesity such as body composition may not be necessary beyond BMI," Dr. Jordan said. "It also suggests that BMI may not be the best measurement of obesity when assessing risk among men, and that we should investigate the waist circumference measurements in more detail." ■

Scottish Study Disputes Notion Of 'Fit and Fat'

LAS VEGAS — Results from a study of nearly 6,000 people in the 1998 Scottish Health Survey suggest that patients who say they are "fit and fat" do not have a good excuse for not losing weight, Catherine Hankey, Ph.D., reported at the annual meeting of the North American Association for the Study of Obesity.

Overweight and obese people who exercised did have lower levels of cardiovascular risk factors for coronary heart disease than couch potatoes of comparable excess weight, said Dr. Hankey of the University of Glasgow (Scotland).

Compared with people of normal weight, however, the fit and fat were still worse off. Cholesterol, hypertension, systolic blood pressure, and other indicators showed greater risk when body mass index (BMI) measured 25 kg/m² or above.

Physicians need to make sure these patients know the health risks of being overweight, Dr. Hankey said. "The most important thing to tackle is the weight," she said at the meeting, cosponsored by the American Diabetes Association.

—Jane Salodof MacNeil