Waist Size, Not BMI, Best 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 osteoarthritis of the knee 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 compared with men, added Ms. Abbate, an epidemiology doctoral student at the University of North Carolina at Chapel Hill.

The findings suggest that 'BMI may not be the best measurement of obesity when assessing risk among men.'

Large waist circumference among women was associated with an increased risk of knee osteoarthritis in the study, but not independently of BMI.

This finding is similar to data reported from the population-based Chingford Study, she said.

Previous osteoarthritis 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 the University of North Carolina'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 osteoarthritis was defined as a Kellgren-Lawrence grade of 2 or more, Ms. Abbate said.

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/m^2 and mean weight was 77 kg, and in men, mean BMI was 29 kg/m^2 and mean weight 89 kg.

Body composition variables associated with higher odds of knee osteoarthritis 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 osteoarthritis (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 osteoarthritis 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 osteoarthritis in women remained significant.

Waist circumference in men, however, remained a statistically significant predictor of knee osteoarthritis (OR 3.46), Ms. Abbate said.

The findings underscore the importance of weight management for osteoarthritis, particularly, 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 osteoarthritis, above and beyond BMI, said senior author and UNC associate professor of medicine Joanne M. Jordan, M.D.

"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," she said.

Waist circumference is garnering attention in the cardiovascular literature, where studies suggest that it is increasingly replacing BMI as the preferred indicator of obesity-related cardiovascular risk. ■