

# Gout Risk Factors Similar for Women and Men

BY MITCHEL L. ZOLER

PHILADELPHIA — Women's risk factors for developing gout are similar to those in men, and baseline serum levels of uric acid may be the most powerful predictor, findings from the Framingham Heart Study show.

Women with no clinical indication of gout but a serum uric acid level of 8.0 mg/dL or greater at baseline had a subsequent 2.7% rate of gout during an average 28 years of follow-



up—a 46-fold higher rate than women with a serum uric acid level of less than 5 mg/dL at baseline, Dr. Vidula Bhole said at the annual meeting of the American College of Rheumatology.

Serum uric acid likewise posed a powerful risk in men. Those with a level of 8 mg/dL or more at baseline had a 3.3% incidence rate during follow-up, 61-fold higher than men who entered the study with a serum level below 5.0 mg/dL.

Even a baseline uric acid level of 5-5.9 mg/dL conferred a greater than three-fold higher risk for developing gout in

women and a greater than fourfold higher risk in men, compared with those whose level was under 5 mg/dL, said Dr. Bhole, an epidemiologist in the Arthritis Research Centre of Canada at the University of British Columbia in Vancouver. (See table.)

**Age, obesity, and heavy alcohol and diuretic use were linked to a higher rate of incident gout in both genders.**

DR. BHOLE

62 years. Among the enrollees, 4,427 had no history of gout at entry and formed the focus for the new analysis.

The group included 2,476 women, with an average age of 47 years and an average serum uric acid level of 4.0 mg/dL. The group also included 1,967 men who entered at an average age of 46 years and a mean serum uric acid level of 5.1 mg/dL.

Average body mass index was 25 kg/m<sup>2</sup> in women and 26 kg/m<sup>2</sup> in men. The prevalence of hypertension was 15% in women and 11% in men. The preva-

Dr. Bhole and her associates used prospectively collected data from the more than 5,000 residents of Framingham, Mass., who entered the Heart Study in 1948, at a baseline age of 29-

Baseline serum level of uric acid	Relative risk for incident gout in women	Relative risk for incident gout in men
Less than 5.0 mg/dL	1.0 (reference rate)	1.0 (reference rate)
5.0-5.9 mg/dL	3.3	4.5
6.0-6.9 mg/dL	5.5	12
7.0-7.9 mg/dL	22	31
At least 8.0 mg/dL	46	61

Note: Data from 4,427 men and women aged 29-62 years at baseline followed for an average of 28 years, with 304 total cases of incident gout.  
Source: Dr. Vidula Bhole

lence of heavy alcohol users was 6% of women and 25% of men, while the prevalence of moderate alcohol users was 24% of women and 32% of men.

The subjects developed 304 cases of gout during an average 28 years of follow-up, with an incidence rate of 1.4 cases/1,000 person-years of follow-up in the women and 4.0 cases/1,000 person-years follow-up in the men.

An analysis of gout incidence rates relative to baseline serum uric acid showed that, for any baseline level, women developed less gout than men. For example, among people who entered the

study with a serum level of 7.0-7.9 mg/dL, the subsequent incidence was 1.3% in women and 1.8% in men.

A multivariate analysis identified several baseline factors linked to a significantly higher rate of incident gout in both genders: age, obesity, heavy alcohol use, hypertension, and diuretic use.

Dr. Bhole said she had no relevant financial relationships. Two of her study colleagues received grant support from and served as consultants to Takeda. One of Dr. Bhole's associates also serves on the advisory board for Savient, a company developing a uric acid-lowering drug. ■

# Water, Skim Milk Consumption May Improve Gout Control

BY AMY ROTHMAN SCHONFELD

PHILADELPHIA — Drinking water or skim milk can improve gout control, according to findings from two studies that highlight the important contribution of lifestyle factors on gout prevention and management.

"Our results show that drinking water is a simple, safe, and effective means of trying to reduce recurrent gout attacks," Dr. Tuhina Neogi said at the annual meeting of the American College of Rheumatology.

The study included 535 people who had had a gout attack within the past year (78% male; mean age, 53 years) and who provided information via the Internet about food, drink, medications, physical activity, and other possible gout risk factors during periods preceding the attack and during attack-free periods. By using a case crossover study design, the participants acted as their own controls. Medical records were accessed to verify gout diagnosis, explained Dr. Neogi of Boston University.

The findings showed that increasing water intake was associated with decreased risk for recurrent gout attacks. Compared with those who drank no or one 8-ounce glass of water per day,

those who drank five to eight glasses had a 40% lower chance of a gout attack and those who drank more than eight glasses had a 46% lower chance.

In the second study, researchers from New Zealand measured the acute effects of skim milk consumption on serum urate concentrations in 16 healthy male volunteers, in light of reports that skim milk was beneficial in gout prevention. The randomized controlled crossover study was designed to assess the effects of skim milk that was from the early season and the late season, as well as MPC85, a milk protein concentrate that contains 85% protein. The effects of soy milk consumption also were assessed, and it was considered the control.

"Late-season" skim milk, primarily available from countries where milking is seasonal and cows are grass fed, is high in orotic acid, a substance known to promote uric acid removal by the kidneys, explained Dr. Nicola Dalbeth, a senior lecturer in

clinical medicine at the University of Auckland (New Zealand). MPC85 skim milk is ultrafiltered and contains very low concentrations of orotic acid, purines, and lactose.

Each participant received a single dose of each product in a random order, with each study visit separated by a week. The amount consumed was equal to about 3.5 8-ounce glasses of milk in one sitting (80 g of protein in 800 mL). Serum and urine were obtained immediately before ingestion and then hourly over the next 3 hours.

Drinking soy milk led to a 10% increase in serum urate. In contrast, all skim milks de-

creased serum urate by about 10% (*P* less than .0001). All products, including soy, led to an increase in the fractional excretion of uric acid (FEUA).

Interestingly, there were differences among the types of skim milk, which may shed light on the underlying mechanism. Late-season skim milk led to a greater increase in FEUA, compared with either ultrafiltered skim milk or early-season skim milk, suggesting that the acute urate-lowering effect of orotic acid may explain these effects.

"We cannot necessarily extrapolate these results from [healthy individuals] to those with gout," Dr. Dalbeth ac-

knowledged. "Furthermore, I am not saying drinking milk should replace allopurinol. But one of the key things we do is spend a lot of time telling people with gout what not to do, such as do not eat red meat. It is very useful to have some positive information."

"Even though gout has been known since antiquity, and we have had treatments around for decades, it is not a well-managed disease. Medical management is still the cornerstone. Still, there are a lot of lifestyle and behavioral aspects that people with gout can do for themselves to reduce their risk," Dr. M. Elaine Husni, vice chair of rheumatology and director of the arthritis and musculoskeletal center at the Cleveland Clinic, said when she was asked to comment on the results of both studies.

Dr. Neogi reported having no conflicts of interest. Dr. Dalbeth said that her study was funded in part by the Fonterra Dairy Cooperative, and that one of the study authors was an employee of Fonterra. ■

## Weight Changes Linked to Uric Acid Changes

Weight change	Odds ratio for change in rate of hyperuricemia	Average change in serum uric acid level
Gain or loss of less than 1 kg (reference)	1.0	0
Loss of 1.0-4.9 kg	0.83	-0.12 mg/dL
Loss of 5.0-9.9 kg	0.68	-0.26 mg/dL
Loss of 10 kg or more	0.44	-0.58 mg/dL
Gain of 1.0-4.9 kg	1.09	+0.07 mg/dL
Gain of 5.0-9.9 kg	1.46	+0.23 mg/dL
Gain of 10 kg or more	1.54	+0.38 mg/dL

Note: Data from 12,510 men at high risk for cardiovascular disease followed for 6 years. All changes statistically significant compared with reference group. All between-group differences adjusted for baseline differences in hypertension, diuretic use, alcohol use, and serum creatinine.

Source: Yanyan Zhu