Adopting low-risk dietary and lifestyle factors related to lower incidence of high blood pressure

July 21 2009

Adherence to modifiable lifestyle and dietary factors including maintaining normal weight, daily vigorous exercise, eating a diet high in fruits, vegetables, low-fat dairy products and low in sodium and taking a folic acid supplement was associated with a significantly lower incidence of self-reported hypertension among women, according to a study in the July 22/29 issue of *JAMA*.

Hypertension (high blood pressure) contributes to more excess deaths in women than any other preventable factor. "Pharmacological treatment of established hypertension has proven benefits, yet these efforts are costly, require medical intervention, and have adverse effects," the authors write. "Primary prevention of hypertension, therefore, would have major positive public health ramifications." While several modifiable risk factors have been identified, the proportion of patients with new-onset hypertension that could conceivably be prevented by modification of a combination of lifestyle factors has not previously been evaluated.

John P. Forman, M.D., M.Sc., of Brigham and Women's Hospital and Harvard Medical School, Boston, and colleagues examined the association between combinations of low-risk lifestyle factors and the risk of developing hypertension. The study included 83,882 adult women (age 27 to 44 years) in the second Nurses' Health Study who did not have hypertension, cardiovascular disease, diabetes, or cancer in 1991, and who had normal reported blood pressure (defined as systolic blood

pressure of ≤120 mm Hg and diastolic blood pressure of ≤80 mm Hg). There was follow-up for new hypertension for 14 years through 2005.

Six modifiable lifestyle and dietary factors for hypertension were identified and included a body mass index (BMI) of less than 25; a daily average of 30 minutes of vigorous exercise; a high score on the Dietary Approaches to Stop Hypertension (DASH) diet based on responses to a food frequency questionnaire; modest alcohol intake; use of nonnarcotic analgesics less than once per week; and intake of 400 μg/d or more of supplemental folic acid. A DASH score was determined based on high intake of fruits, vegetables, nuts and legumes, low-fat dairy products, and whole grains, and low intake of sodium, sweetened beverages, and red and processed meats.

The association between combinations of 3 (normal BMI, daily vigorous exercise, and DASH-style diet), 4 (3 low-risk factors plus modest alcohol intake), 5 (4 low-risk factors plus avoidance of nonnarcotic analgesics), and 6 (folic acid supplementation ≥400 □g/d) low-risk factors and the risk of developing hypertension was analyzed.

During the follow-up, a total of 12,319 new cases of hypertension were reported. All 6 modifiable risk factors were independently associated with the risk of developing hypertension during follow-up after also adjusting for age, race, family history of hypertension, smoking status, and use of oral contraceptives. For women who had all 6 low-risk factors (0.3 percent of the population), they had about an 80 percent lower risk of developing high blood pressure.

The hypothetical population attributable risks (PARs; an estimate of the percentage of new hypertension cases occurring in this population that hypothetically could have been prevented if all women had been in the low-risk group) was 78 percent for women who lacked these low-risk factors. The PARs were 72 percent for 5 low-risk factors (0.8 percent of

the population); 58 percent for 4 low-risk factors (1.6 percent of the population); and 53 percent for 3 low-risk factors (3.1 percent of the population). Body mass index alone was the most powerful predictor of hypertension, with a BMI of 25 or greater having an adjusted PAR of 40 percent compared with a BMI of less than 25.

The authors add that their "data indicate that adherence to a combination of low-risk lifestyle factors could have the potential to prevent the majority of new-onset hypertension in young women irrespective of family history of hypertension and irrespective of oral contraceptive use. The former conclusion is particularly poignant given that some women may mistakenly believe that their parental history signifies that their own development of hypertension may be unavoidable; rather, these women may conceivably at least delay onset of hypertension by reducing their risk factors."

"In conclusion, adherence to low-risk dietary and lifestyle factors was associated with significant reductions in the incidence of self-reported hypertension and could have the potential to prevent a large proportion of new-onset hypertension occurring among young women. Prevention of hypertension would, in turn, have major public health benefits."

More information: *JAMA*. 2009;302[4]:401-411.

Source: JAMA and Archives Journals (news : web)