

Atherosclerosis Common in Marathon Runners

BY BRUCE JANCIN

FROM THE ANNUAL MEETING OF THE AMERICAN COLLEGE OF CARDIOLOGY

ATLANTA — Middle-aged male marathon runners may be at substantial cardiovascular risk.

A CT coronary angiography study of 25 middle-aged male runners, each of whom had completed the Twin Cities Marathon annually for the past 25 consecutive years, demonstrated they had significantly greater mean volumes of coronary calcified plaque (274 mm³)

VITALS

Major Finding: Mean volumes of coronary calcified plaque were 274 mm³ in male marathon runners and 169 mm³ in age-matched sedentary controls.

Data Source: A CT coronary angiography study.

Disclosures: The study was funded by the Ken Rome Foundation. The speakers had no relevant financial disclosures.

than did age-matched sedentary controls (169 mm³) who underwent 64-slice CT angiography for a variety of clinical indications, Dr. Jonathan Schwartz reported at the meeting.

The marathoners also had higher coronary calcium scores and greater noncalcified plaque volumes than did controls. These differences did not achieve statistical significance, however. Still, the veteran marathoners were no better off in these domains than were the sedentary controls, noted Dr. Schwartz, an intern at the University of Colorado, Denver.

CAD risk might get overlooked in patients who are dedicated marathoners, the investigators said. In a sense, completing a race or a hard training workout is like passing an informal stress test. Also, high-mileage runners often have excellent Framingham risk scores. Indeed, the avid Twin Cities marathoners had favorable lipid profiles and low resting heart rates and body mass indexes. But such presumptions can lead to a false sense of security about cardiovascular health, as the CT angiography findings show.

“The bottom line here is just because you run a lot of marathons and you’re very active doesn’t mean you’re protected from coronary artery calcification,” Dr. Schwartz said in an interview. “Benefits to long-term, high-volume endurance training for overall health include favorable body mass index, heart rate, and lipid panel, but these may be counterbalanced by metabolic and mechanical factors that enhance coronary plaque growth.”

Dr. Jonathan Schwartz’s father and coinvestigator in the study was Dr. Robert S. Schwartz of the Minneapolis Heart Institute. Dr. Robert Schwartz speculated that avid distance runners may spend many hours training and racing under metabolically demanding conditions.

They are tachycardic, in lactic acidosis, and under oxidative stress; their blood pressure is increased; and they are possibly leaking calcium into the blood because of microtrauma to weight-bearing bones, he said. “You can injure the artery by smoking, or you can injure the artery by acidosis and hypertension. Is it essentially the same common pathway? We don’t have an answer.”

He added that this study confirms ear-

lier work by Dr. Stefan Möhlenkamp of the University of Duisburg-Essen (Germany), who studied 108 apparently healthy middle-aged German marathoners and found they had significantly higher coronary artery calcium scores and significantly lower Framingham risk scores than did age-matched controls. During 21 months of follow-up, four marathoners, all with coronary artery calcium scores of 100 or more, experi-

enced coronary events (Eur. Heart J. 2008;29:1903-10).

Elsewhere at the meeting, Dr. Despina Kardara reported that a group of Greek marathoners were found to have stiffer arteries than did age- and gender-matched controls.

The 49 marathoners, mean age 38, included 7 women. All had trained an average of 15 hours per week for 11.6 years. Their mean pulse wave velocity—

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'Because you run a lot of marathons ... doesn't mean you're protected from coronary artery calcification.'

DR. J. SCHWARTZ

than the 6.3 m/sec seen in controls who were not runners. ■

Although the marathoners' 60-bpm mean resting heart rate was 6 bpm lower than in controls, their mean brachial blood pressure of 126/78 mm Hg was significantly higher than the mean of 115/71 mm Hg for controls. The findings raise the possibility that a long-time, high-volume, high-intensity exercise training program may be harmful, said Dr. Kardara of Athens Medical School.

Her study was supported by the Athens Classic Marathon Organizing Committee. She reported having no financial conflicts. ■



Avid distance runners may spend many hours training and racing under metabolically demanding conditions; they are possibly leaking calcium into the blood because of microtrauma to weight-bearing bones.

Indication

Humalog (insulin lispro injection [rDNA origin]) is for use in patients with diabetes mellitus for the control of hyperglycemia. Humalog should be used with longer-acting insulin, except when used in combination with sulfonylureas in patients with type 2 diabetes.

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Other Side Effects

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For additional safety profile and other important prescribing considerations, see accompanying Brief Summary of full Prescribing Information.

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