Mealtime therapy can fit into cubicle #8.

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) 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 earlier 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, experienced 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—

Humalog®, part of the Humalog® approach, is designed to help fit mealtime therapy into your patient’s life. It’s small, doesn’t need refrigeration after the first use, and can be used almost anywhere. To find out more, go to www.Humalog.com or see your Lilly sales representative.

Humalog is for use in patients with diabetes mellitus for the control of hyperglycemia. Hypoglycemia is the most common adverse effect associated with insulins, including Humalog.

For complete safety profile, please see Important Safety Information and Brief Summary of full Prescribing Information on adjacent pages. Please see full user manual that accompanies the pen.
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.

Important Safety Information
Humalog is contraindicated during episodes of hypoglycemia and in patients sensitive to Humalog or one of its excipients.

Humalog differs from regular human insulin by its rapid onset of action as well as a shorter duration of action. Therefore, when used as a mealtime insulin, Humalog should be given within 15 minutes before or immediately after a meal.

Due to the short duration of action of Humalog, patients with type 1 diabetes also require a longer-acting insulin to maintain glucose control (except when using an insulin pump). Glucose monitoring is recommended for all patients with diabetes.

The safety and effectiveness of Humalog in patients less than 3 years of age have not been established. There are no adequate and well-controlled clinical studies of the use of Humalog in pregnant or nursing women.

Starting or changing insulin therapy should be done cautiously and only under medical supervision.

Hypoglycemia
Hypoglycemia is the most common adverse effect associated with insulins, including Humalog. Hypoglycemia can happen suddenly, and symptoms may be different for each person and may change from time to time. Severe hypoglycemia can cause seizures and may be life-threatening.

Other Side Effects
Other potential side effects associated with the use of insulins include: hypokalemia, weight gain, lipodystrophy, and hypersensitivity. Systemic allergy is less common, but may be life-threatening. Because of the difference in action of Humalog, care should be taken in patients in whom hypoglycemia or hypokalemia may be clinically relevant (eg, those who are fasting, have autonomic neuropathy or renal impairment, are using potassium-lowering drugs, or taking drugs sensitive to serum potassium level).

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

Please see full user manual that accompanies the pen.

Humalog® is a registered trademark of Eli Lilly and Company and is available by prescription only.
Humalog® KwikPen™ is a trademark of Eli Lilly and Company and is available by prescription only.

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.