

Lifestyle Changes Cut CRP in Obese Diabetics

BY BRUCE JANCIN

ORLANDO — A behavioral lifestyle intervention focused on diet and exercise in obese individuals with type 2 diabetes resulted in an impressive reduction in elevated high-sensitivity C-reactive protein levels at 1 year in the Look AHEAD investigation.

“The magnitude of reduction in CRP was similar to that seen in statin trials, particularly JUPITER,” Dr. Maria Belalcazar noted at the annual scientific sessions of the American Heart Association.

That’s an encouraging parallel in light of the spectacular success of JUPITER (Justification for the Use of Statins in Prevention: an Intervention Trial Evaluating Rosuvastatin), which was halted for ethical reasons after a median 1.9 years of follow-up because of a significant reduction in cardiovascular events in statin-treated nondiabetic subjects with increased systemic inflammation as reflected by an elevated baseline CRP, said Dr. Belalcazar of the University of Texas Medical Branch at Galveston.

The intervention utilized in the Look AHEAD (Action for Health in Diabetes)

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study led to salutary changes in glycosylated hemoglobin, body weight, blood pressure, fitness, and need for antidiabetic medications.

Of note, the investigators found that only the changes in glycosylated hemoglobin, body mass index, and waist circumference independently predicted a reduction in CRP level in multivariate regression analyses.

“Improvements in glucose control achieved with the intensive lifestyle intervention in Look AHEAD were associated with a decrease in CRP levels independently of changes in weight, fitness, and lipid control. This suggests that the modality with which glucose is lowered is important when considering its effect on CRP,” Dr. Belalcazar said.

Look AHEAD is a 16-center U.S. study involving 5,145 overweight or obese adults with type 2 diabetes. They were randomized to the intensive lifestyle intervention or usual-care diabetes education and support.

All subjects continued to see their primary care physicians.

The 1-year impact on traditional cardiovascular risk factors has previously

been reported (Diabetes Care 2007;30:1374-83).

Dr. Belalcazar reported on the 1,759 participants for whom baseline and 1-year CRP measurements were available. The investigators decided to take a closer look (see box) at this subgroup in light of the JUPITER results.

The weight loss intervention included three group sessions and a single one-on-one session per month with psychologists, dietitians, and exercise specialists during the first 6 months, and one fewer group session per month in months 7-12.

Caloric restriction through the use of liquid meal replacements and frozen entrees provided free of charge was the main weight loss tool used by the study participants.

The home-based physical activity program encouraged a build-up to a target of 175 minutes of moderate-intensity exercise per week, with walking encouraged.

The central question is whether the reduction in CRP and other benefits on surrogate markers of cardiovascular risk achieved nonpharmacologically through the Look AHEAD lifestyle intervention will translate into a significant decrease in cardiovascular event rates during ongoing follow-up planned for up to another 8 years.

The Look AHEAD investigation is sponsored by the National Institute of Diabetes and Digestive and Kidney Diseases.

Dr. Belalcazar reported no financial conflicts. ■

Key 1-Year Benefits With Lifestyle Intervention

Cardiovascular risk factors	Baseline	Change at 1 Year	
		Intervention arm	Controls
Median CRP	4.2 mg/L	-1.24 mg/L	-0.35 mg/L
Hemoglobin A _{1c}	7.3%	-0.7%	-0.2%
Body mass index	36 kg/m ²	-3.2 kg/m ²	-0.3 kg/m ²
Fitness (submaximal, in metabolic equivalents)	5.1	+1.0	+0.3

Note: Based on data from 1,759 overweight or obese adults with type 2 diabetes. All differences between intervention-arm patients and controls are significant. Source: Dr. Belalcazar

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EXPERT COMMENTARY

The Overweight Child With Hypertension

When presented with an overweight child who has hypertension, collect a detailed history, including a 24-hour food-intake history. Also assess the child’s nutritional habits, such as number of fast-food items typically eaten per week and number of family dinners. Ask about the fluids these children generally consume. For instance, do they drink any caloric beverages other than low-fat milk?

Take an exercise history. Inquire how many hours per day the child is exposed to television, video games, and other media.

Social interaction can be particularly important with an overweight child. Ask if the child has been teased or bullied at home, in school, or elsewhere in the community.

Next ask the parent(s) and patient what they know about high blood pressure.

Also inquire about a family

history of hypertension.

Confirm any elevation in the child’s blood pressure during a physical examination. If the patient has severe hypertension, it is usually time to refer the child to a specialist.

If the child has hypertension for three consecutive monthly visits, further evaluation with blood work is appropriate. Order a complete metabolic panel, urinalysis, and fasting lipid panel. Urinalysis, for example, is useful as a screen for type 2 diabetes.

On a full review of systems, identify other morbidities associated with obesity and perform appropriate tests. For instance, the child with daytime sleepiness and snoring may require a sleep study to identify obstructive sleep apnea.

In addition, if liver function tests are elevated, a pediatric ultrasound exam can identify a fatty liver.

You can also order an elec-

trocardiogram to identify heart pathology and refer the child if the findings are abnormal.

Many families request thyroid testing for an overweight child. Full thyroid function tests are not cost effective and need not be done. A thyroid-stimulating hormone test should suffice.

As for behavioral counseling, at the Cleveland Clinic Children’s Hospital, we recommend our “5 to GO!” messaging, in which children are told to eat 5-a-day fruits and veggies; give 4 compliments a day to anyone they encounter, including other kids, and get 4 compliments a day from anyone; consume 3 dairy products a day; engage in no more than 2 hours of media/TV time a day; drink 0 sugar-sweetened beverages, and go!

For teenagers, we aim for 4 dairy/calcium servings and 3 compliments a day (not that teenagers need fewer compli-

ments, but they do need more calcium than the under age 10 years crowd).

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better than trying to do everything at once. Follow up, follow up, and follow up—with a lot of cheerleading!

Patient education is also essential.

Help patients and their families figure out how to cook a no-added-salt diet, how to shop the periphery of a grocery store where the fresh produce is located, and how to build physical activity and exercise into the family’s daily plan.

Consider a weight management program such as our Fit Youth Program.

Patients and families who participate in this 12-week program at the Cleveland Clinic receive group counseling sessions led by a psychologist in combination with a pediatrician, a dietitian, and an exercise physiologist.

Multidisciplinary interventions such as this one can accomplish modest weight loss versus progression toward 30

pounds of weight gain per year, as occurs in many of our children who do not receive effective treatment. ■

DR. ROME is section head of adolescent medicine at Cleveland Clinic Children’s Hospital. She specializes in obesity treatment and directs the hospital’s obesity programs that include multidisciplinary input from pediatric cardiologists, pediatric gastroenterologists, and nutrition therapists. To comment, e-mail her at fjnews@elsevier.com.



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