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Metabolism Society

Dr. Bernstein on the ACCORD Trials

What is "surprising" about the partial halting of the ACCORD study ("Diabetes Study Partially Halted After Deaths," Feb. 7, 2008) is that the researchers were so surprised by completely predictable results.

What is not at all surprising is that the formulation of the failed study reflects the longstanding and general ignorance of the American Diabetes Association about what constitutes good treatment of diabetes, and what "normal" blood sugar levels are.

If halting the study calls "into question how the disease, which affects 21 million Americans, should be managed" by the ADA, then that is a positive step. If it causes diabetics to become fearful of blood sugar normalization, then that is a step backwards.

I was diagnosed with diabetes at the age of 12, in 1946, and followed ADA recommendations for many years, recommendations that would have killed me had I not discovered just how toxic those recommendations were. Sadly, those recommendations have not improved the quality of life for diabetics in the intervening decades. In order to encourage that, I became the first diabetic ever to self-monitor his own blood sugar, and subsequently become a doctor.

The ADA maintains that a glycosylated hemoglobin (A1c) of 6 or below is "normal." That assumption of normal was reflected in the study.

A1c is a method of measuring average blood sugar levels. But an A1C of 6 equates to blood sugar levels of about 140 milligrams per deciliter, which, to my way of thinking, is still very high, given that, for nondiabetics, normal is about 85 mg/dl. An A1C of 6.5 corresponds to about double normal.

One can only assume that if the doctors in the study were following ADA guidelines, then the patients in the trial followed the standard ADA dietary recommendations. Those recommendations are a recipe for disaster. There is a simple explanation for this: carbohydrate.

At a minimum, the ADA recommends 130 grams of carbohydrate per day for diabetics. That recommendation is as recent as last month. But as the study was proposed more than a decade ago, we can only assume that the diabetics in this study were consuming at least that much carbohydrate. In 1996, the ADA was recommending that 60-65 percent of a diabetic's caloric intake should be in the form of carbohydrate. That is more than 10 times

the amount that I recommend for my patients (I recommend 5-10 percent) because it makes blood sugar control impossible. Why?

The answer is simple: the more carbohydrate you eat, the more glucose you will have in your bloodstream. The more glucose you have in your bloodstream, the more insulin you will have to make or inject. There are three problems with this.

First is that the combination of high levels of insulin in the blood stream and large amounts of dietary carbohydrate cause weight gain. For someone who already has heart disease, this further increases the risk of premature death.

Second is that most of the complications of diabetes—heart disease, peripheral neuropathy, and the legion of others—result from high levels of glucose in the blood stream. Abnormally high levels of insulin in the blood stream—common in type 2 diabetics—cause vascular damage over and above what's caused by elevated blood sugar. It's been repeatedly demonstrated that grossly elevated insulin levels damage the vasculature and increase vascular rigidity and leakage.

Third is that the more carbohydrate you eat, the more insulin you need. Injected insulin cannot be fine-tuned the way that a nondiabetic's body fine-tunes insulin. A number of years ago, researchers at the University of Minnesota showed a 29-39 percent variability in the action of 20 units of injected insulin. Twenty units of insulin is what I would call an industrial dose, necessitated by the absolutely wrong recommendations of the ADA.

If we just take the minimum, a 29 percent variability will create a 7-unit uncertainty in that 20-unit injection. So what does this mean?

One unit of insulin will bring down blood sugar by about 40 mg/dl. Multiply that by 7, and you have a 280 mg/dl uncertainty. The only solution to this problem is to make sure that any dose of insulin is as small as possible.

This uncertainty leads to the blood sugar "rollercoaster" that many diabetics experience. For someone with preexisting heart disease, the rollercoaster is a major stressor of the cardiac system and can lead to untimely death.

The only way to keep insulin levels down and blood sugars normal, is to eliminate fast-acting carbohydrate, such as starch (bread, rice, pasta, etc.) and sugar from the diabetic diet, eat only slow-acting carbohydrate (greens and vegetables), and reduce the overall amount of carbohydrate to about 30 grams a day.

The ADA derides this approach, maintaining that diabetics are either too stupid or lazy to follow it, but it has worked fine for me and my patients for many years. If I had followed the ADA approach, I would likely have been dead about 30 years ago.

The ADA has also maintained that low carbohydrate diets should be avoided because there have never been any studies showing that they are safe over the long term. But there have been many studies of peoples who, when they leave their indigenous diets behind for Western high carbo diets, develop typical Western health problems: obesity, diabetes,

cardiac disease, Etc. The longest running study of them all, human history, has shown that diabetes, atherosclerosis, and heart disease didn't exist until after the spread of agriculture.

There is another, institutional problem with blood sugar normalization: physicians fears of having a patient die from hypoglycemia, for which a doctor could be sued. So it's in the interest of physicians to keep their patients' blood sugars unnaturally high. If they die of heart attacks, as in this study, or of other disease, as often happens, then they can just shrug and say it was the "natural" consequence of the disease.

To that, I say, nonsense.

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