

Diabetes Potpourri: Nomenclature and Glycemia

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My local Sunday newspaper recently featured a section called “Total Health,” which included 16 pages of health and lifestyle advice, including information on nutrition and physical activity, diabetes, heart disease, and obesity. It encouraged readers to attend an upcoming local health fair, at which they could get more health-related information and undergo screening of blood pressure, cholesterol, blood glucose, and BMI. I thought the newspaper section and the planned pro-

gram for the fair were well-conceived.

One article on the importance of cardiovascular risk and disease prevention appropriately emphasized the goals of blood pressure, cholesterol, and weight control in the total management of type 2 diabetes. Detracting from the substance of the article, however, were many references to individuals with diabetes as “diabetics.” We should avoid using this terminology, as it inappropriately dehumanizes the people to whom it refers. “Diabetic” is an adjective, not

a noun. It refers to a disease, not a person. We don’t use the terms “hypercholesterolemics” or “cardiacs” so why “diabetics”?

The same article quoted a local cardiologist as having stated that glycemic control “in type 2 diabetics” was not as important as the prevention of coronary disease. I do not think these are mutually exclusive. It is clear that multiple-risk management, including aggressive blood pressure and lipid control, is necessary to prevent cardiovascular disease

(CVD) and is crucial because CVD is the number one cause of death in this patient population. But glycemic control likely affects the development of CVD as well and therefore should not be so minimized.

To date, a number of studies that included patients with type 2 diabetes have demonstrated a strong association between hyperglycemia and the occurrence of cardiovascular events. For example, the retrospective Funagata Diabetes Study demonstrated that impaired glucose tolerance (IGT) is a risk factor for CVD in Japanese individuals. It showed that the cumulative survival rates for all-cause and CVD mortality in both glucose-intolerant and diabetic subjects were significantly lower than those in the normal glucose-tolerant group.¹ These data suggest that even mild states of glucose intolerance are a risk for CVD mortality.

Data from 3,174 U.S. adults aged 30–75 years, who were followed in the prospective National Health and Nutrition Examination Survey (NHANES II) for 12–16 years, showed that all-cause and CVD mortality rates were greatest for adults with previously diagnosed diabetes, followed by those with undiagnosed diabetes, those with IGT, and those with normal glucose tolerance. These results also suggest that mild glucose intolerance is associated with a greater risk of CVD mortality, which appears to be independent of established CVD risk factors.²

Investigators in the U.K. Prospective Diabetes Study found a 16% reduction in the risk of myocardial infarction (MI) in type 2 diabetic subjects, including nonfatal and fatal MI and sudden death, just missing the level for statistical significance ($P = 0.052$).³ However, they performed a secondary multivariate observational analysis of 10-year follow-up data to evaluate the relationship between exposure to hyperglycemia over time, defined as the updated mean of annual hemoglobin A_{1c} (A1C) measurements, and the development of complications. Results showed that the risk of

diabetes complications, including cardiovascular events, was strongly associated with hyperglycemia, with no indication of a glycemic threshold. For each 1% reduction in A1C, significant decreases in the risks of any diabetes-related end point, including peripheral and cardiovascular disease, were seen.⁴

Glycemia is associated with pathophysiological processes that may lead to vascular disease, including increased oxidative stress, increased endothelial inflammation, and glycosylation of proteins. Controlling glycemia may reduce reactions involving factors that promote these processes and lead to a reduction in the development of cardiovascular as well as small vessel disease.^{5–9}

Minimizing the importance of glycemic control sends the wrong message to our patients. To them, diabetes means high blood sugar. To minimize the consequence of control minimizes the importance of diabetes as a disease and makes it seem a less serious condition. It sends us backward to the days when people, including health care providers, talked about having “a touch of sugar” or “borderline diabetes.” (Those days *are* past, aren’t they?)

Downplaying glycemic control also ignores its clear impact on the development of microvascular complications, convincingly demonstrated in many studies. When completed, the ongoing National Institutes of Health-sponsored Action to Control Cardiovascular Risk in Diabetes (ACCORD)¹⁰ and the VA Cooperative Study of Glycemic Control and Complications in Diabetes Mellitus Type 2¹¹ trials, specifically designed to evaluate the impact of glycemic control on development of CVD, should clarify this important remaining issue in the treatment of diabetes.

Pending the outcome of these trials, we should continue to think about diabetes as a cluster of risk factors, but remember that hyperglycemia lies within that cluster and should not be ignored. It is well established to be an important risk factor for other vascular

complications. I believe it will prove to be an independent factor that increases risk for CVD in people with diabetes (not “diabetics”).

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