

Guidelines for screening and managing diabetes in the United States of America¹

Diabetes has reached epidemic proportions in the United States of America, affecting more than 16 million persons. In response to that serious situation, two allied medical organizations recently issued new guidelines on screening and managing the disease.

The new guidelines were developed by a consensus group of diabetes experts brought together by the American Association of Clinical Endocrinologists (AACE) and the American College of Endocrinology (ACE). The AACE is a professional medical organization of some 3 700 physician members who focus on caring for patients with endocrine problems such as diabetes, thyroid disorders, osteoporosis, lipid (cholesterol) disorders, reproductive disorders, growth hormone deficiency, hypertension, and obesity. The ACE is the "scientific arm" of AACE, providing and promoting education and research in clinical endocrinology.

The panel of experts assembled by the two groups reviewed research from international studies on diabetes, with the goal of translating that information into practical guidelines that will result in more effective management of this disease. The new guidelines are also intended to help empower patients to manage their disease more effectively and thus avoid such complications as kidney failure, blindness, amputations, and premature heart attacks.

The experts panel made recommendations in four major areas, as described below.

Lowering the diabetes screening age to 30 for high-risk individuals

Current screening guidelines for diabetes diagnosis have resulted in an overall 50% prevalence of complications at the time of diagnosis, indicating that diabetes is present long before the diagnosis is made. That high frequency mandates earlier diagnosis of diabetes, according to the experts panel. Further, prevalence data on newly diagnosed cases of diabetes indicate a younger age of onset within the general population, and especially among high-risk ethnic (minority) populations. Recent data from the Centers for Disease Control and Prevention (CDC) of the United States have shown that diabetes in the country increased 33% from 1990 to 1998, including by more than 70% among people

Key words: diabetes, guidelines.

¹ Based on: American College of Endocrinology, American Association of Clinical Endocrinologists. ACE consensus conference on guidelines for glycemic control [report]; World leaders in endocrinology call for new diabetes guidelines [press release]. Jacksonville, Florida, United States of America: ACE, AACE; 2001. Available from: <http://www.aace.com> [Internet site]. Accessed 23 August 2001.

aged 30 to 39. Given those factors, the panel recommended targeted case finding in high-risk individuals 30 years or older, replacing the current 45 years.

Ethnic populations account for nearly half of all newly diagnosed diabetes cases in the United States. One in four Latinos are diagnosed with diabetes by the age of 45, and African-American children as young as 5 are exhibiting symptoms of insulin resistance, which is the beginning stage of diabetes.

The panel pointed to a number of risk factors for the development of diabetes that should be considered in targeted screening for populations at high risk. These risk factors included:

- history of diabetes
- cardiovascular disease
- overweight
- sedentary lifestyle
- belonging to a minority group, including Latino/Hispanic, African-American, Asian-American, Native American, or Pacific Islander
- previously identified impaired glucose tolerance or impaired fasting glucose
- hypertension
- increased triglycerides and/or low high-density lipoprotein cholesterol
- history of gestational diabetes
- delivery of a baby weighing more than 9 pounds (4.1 kg)
- polycystic ovarian disease

Lowering the HbA_{1c} blood sugar test to 6.5%

Epidemiologic data from various studies, including the United Kingdom Prospective Diabetes Study, have shown an elevated risk for all microvascular and macrovascular complications beginning at 6.5% on the hemoglobin A_{1c} (HbA_{1c}) test, which is a simple blood test given to patients with diabetes to determine how well their blood sugar has been controlled over the preceding 3 months. A number of small cohort trials further corroborate the significance of HbA_{1c} elevations greater than 6.5%. These findings are also consistent with a number of epidemiologic studies implicating the association of hyperglycemia with the development of diabetic complications. Given that, the panel recommended lowering the target for diabetes control to 6.5%.

HbA_{1c} levels under 6% are normal for people without the disease. When patients know their HbA_{1c} level and their goals, they are better able to prevent diabetes-related complications. The panel recommended that assessment be performed at least twice per year in patients who are at target.

Assessment should be performed quarterly or more frequently in patients who are above target and/or undergoing a change in therapy.

Lowering the postprandial blood sugar levels

The risk of diabetes comes from tissues that are exposed to abnormally high blood sugar levels both before and after meals. For example, an increased risk of retinopathy is clearly associated with fasting plasma glucose > 110 mg/dL. The panel recommended lowering target levels of blood sugar to 110 before eating (preprandial) and to 140 after eating (2 hours postprandial). Addressing the postprandial levels will not only reduce tissue damage for patients but also alert them to a problem previously unaddressed in blood sugar monitoring.

Prior to the development of glycated protein technologies, fasting glucose values were the primary assessment of glycemic control. However, this method is limited because it can only measure the glycemic burden at a single point in time and may not accurately reflect overall glycemic control. With the advent of self-monitoring technology, assessment of fasting and preprandial glucose levels has evolved into an important element in day-to-day decision-making in the management of diabetes. Postprandial hyperglycemia is a key element of the total glycemic burden in patients with diabetes and is an important component of the HbA_{1c} level. The HbA_{1c} can, therefore, be viewed as the summation of both preprandial and postprandial glycemia. In order to maximally reduce HbA_{1c} levels, assessments of both preprandial and postprandial glucose levels are necessary.

Additional research

The experts panel suggested three areas for additional research.

Data regarding the impact of glycemic control on the development of microvascular complications suggest a differential sensitivity to hyperglycemia in some minority populations. This observation appears to be true even after adjustment for comorbid conditions. Further research should be pursued to quantify this phenomenon and to elucidate the mechanism or mechanisms by which such differential sensitivity occurs.

There also appears to be a genetic component to the differential sensitivity to hyperglycemia, which is independent of comorbid conditions; this area warrants further study.

Finally, epidemiologic evidence suggests there is a robust relationship between post-chal-

lence hyperglycemia and cardiovascular risk. This finding should be explored in a large-scale prospective randomized interventional trial that focuses on postprandial glycemetic control.

SINOPSIS

Pautas para el tamizaje y el manejo de la diabetes en Estados Unidos de América

Para responder a una creciente epidemia de diabetes mellitus en Estados Unidos de América, un panel de expertos in-

tegrado por dos organizaciones médicas asociadas estudiaron el problema del tamizaje y el manejo de la diabetes y acaba de emitir recomendaciones con respecto a varios aspectos esenciales. Las recomendaciones son, entre otras: 1) iniciar las pruebas para el tamizaje de la diabetes a los 30 años de edad en vez de los 45 en personas en alto riesgo; 2) reducir el valor límite en la prueba de hemoglobina A_{1c} a 6,5%, y 3) reducir las concentraciones límite de glucemia a 110 mg/dL antes de comer y a 140 mg/dL después de comer. El grupo de expertos también recomendó efectuar más investigaciones en algunas áreas.

Chronic Disease Prevention and Control 16th National Conference

Dates: 27 February–1 March 2002
Location: Sheraton Atlanta Hotel
Atlanta, Georgia, United States of America

The theme of the 2002 Conference on Chronic Disease Prevention and Control is “cultivating healthier communities through research, policy, and practice.” Organized by the Centers for Disease Control and Prevention and several other groups, the meeting is expected to attract almost 1 000 health professionals and others. Goals for the conference include promoting knowledge and awareness of successful, cost-effective approaches to reducing the burden of chronic diseases as well as sharing cutting-edge research and research methods in chronic disease prevention and control.

The meeting will include more than 200 research and programmatic sessions, posters, and skills training sessions. There will also be an exhibits area.

The meeting is intended to be of interest to a broad range of participants, including physicians and other health care providers, educators, epidemiologists, statisticians, health communications specialists, health economists, government public health professionals, academicians, researchers, and health program managers and directors, from both the United States and other countries.

The conference fee for early registrants (postmarked by 31 January 2002) is US\$ 180; after that date, the cost is US\$ 235. The fee for students is US\$ 75.

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