Report reframes diabetes diagnosis

Lower plasma glucose threshold, new terminology, broader testing recommended

A n international expert committee has recommended that new classification and diagnostic criteria for diabetes mellitus be adopted by all individuals and organizations caring for persons with diabetes. The fasting plasma glucose (FPG) concentration used to define diabetes has been lowered to 126 mg/dL, now recognized as the threshold for microvascular complications. The FPG previously used for diagnosis, 140 mg/dL or greater, was based on a 1979 classification system.

The American Diabetes Association, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), and the Centers for Disease Control and Prevention (CDC) have endorsed the committee's report, which was published in the July issue of Diabetes Care.1 The goals of the report are to “define and describe diabetes as we know it today, present a classification scheme that reflects its etiology and/or pathogenesis, provide guidelines for the diagnosis of the disease, develop recommendations for testing that can help reduce the morbidity and mortality associated with diabetes, and review the diagnosis of gestational diabetes.”

Use of FPG for diagnosis is recommended over oral glucose tolerance testing (OGTT). Testing of all adults 45 years or older is advised, with repeat testing every three years. The committee set the upper limit of normal FPG at 110 mg/dL and recognized two categories of impaired glucose homeostasis that are risk factors for future diabetes and cardiovascular disease:

1. Impaired fasting glucose (IFG), a new category, defined by FPG ≥10 but <126 mg/dL, and
2. Impaired glucose tolerance (IGT), an existing category, defined by an OGTT result of ≥140 but <200 mg/dL in the two-hour sample.

The committee also recommended revised nomenclature that eliminates the terms “insulin-dependent diabetes mellitus” (IDDM) and “non-insulin-dependent diabetes mellitus” (NIDDM) and uses Arabic rather than Roman numerals in referring to type 1 and type 2 diabetes. It is important “to move away from a system that appears to base the classification of the disease, in large part, on the type of pharmacological treatment used in its management toward a system based on disease etiology where possible,” the report states, since the treatment of diabetes can vary considerably and does not indicate the underlying problem. The new classification system reflects advances in understanding the molecular pathophysiology of diabetes, wrote the authors of an editorial2 accompanying the committee report.

Guidelines for diagnosis. The report encourages the use of FPG for diagnosing diabetes but lists three possible diagnostic tests, each of which must be confirmed on a subsequent day by any one of the three tests:

1. An FPG of ≥126 mg/dL (after no caloric intake for at least eight hours),
2. A casual plasma glucose (taken at any time of day without regard to time of last meal) ≥200 mg/dL, accompanied by symptoms of increased urination, increased thirst, and unexplained weight loss, or
3. An OGTT value of ≥200 mg/dL in the two-hour sample.

Compared with OGTT, measurement of FPG is simpler and equally accurate, says the report. Other advantages include convenience, greater acceptability to patients, and lower cost than OGTT. Glycosylated hemoglobin measurement is not recommended for diagnosis, the committee said.

The editorial states that the new criteria “bring into much closer alignment the fasting and postprandial levels of glycemia at which diabetes should be routinely diagnosed and the risk of microvascular and macrovascular complications.” Some 10–20% of patients who have developed retinopathy and neuropathy by the time their FPG exceeds 140 mg/dL, the authors noted.

Recommendations for testing. The committee report says the health care community should consider testing for diabetes in all adults at age 45 and above and, if the results are normal, repeat testing every three years. Testing should be considered at a younger age or performed more frequently in individuals at high risk for diabetes, including:

- People who are obese (more than 20% above their ideal body weight)
- Those who have a first-degree relative with diabetes
- Members of high-risk ethnic groups (African Americans, Hispanics, Native Americans, Asians)
- Women who have delivered a baby weighing more than ten pounds or been diagnosed with gestational diabetes mellitus
- Persons with hypertension (blood pressure of 140/90 mm Hg or higher)
- Those with high-density lipoprotein cholesterol concentrations of 35 mg/dL or lower and triglyceride concentrations of 250 mg/dL or higher
- Those with previous test results indicating IFG or IGT.

The previous recommendation that all pregnant women be tested has been changed. The current recommendation is that women at low risk (those less...
than 25 years of age, of normal body weight, and who have no family history of diabetes and do not belong to an ethnic group with a high prevalence of the disease) not be screened.

Public health impact. The number of Americans diagnosed with diabetes according to the new criteria could increase by 2 million, bringing the total to 10 million, said the editorial’s authors, who represent NIDDK and CDC, respectively. Although this raises concerns about “provider workload, patient anxiety, economic impact, and issues such as insurability and employability in those newly diagnosed,” they acknowledged, “We believe these concerns are overshadowed by the long-term health and potential cost benefits of appropriate early diagnosis.”


Study offers preliminary information on benefits of postmenopausal hormones in various risk groups

The latest analysis of postmenopausal hormone replacement therapy (HRT) provides several more pieces of information that women and their health care providers should factor into decisions about starting HRT. For many women, the decision is an unsettling attempt to balance their risk of heart disease against their risk of breast cancer and to estimate how the potential risks stack up against HRT’s beneficial effects on bone. The new analysis sheds some light on the relationship between hormone use and mortality in patients at high risk and in patients at low risk for heart disease or breast cancer.1 The study also raises questions about the optimal timing and duration of HRT.

The researchers used data obtained from biennial health surveys performed between 1976 and 1992 of women who participated in the Nurses’ Health Study. Women who reported a history of cardiovascular disease or cancer on the 1976 survey were excluded, as were those who reported either condition before menopause. Women became eligible for analysis after menopause. Each woman who died between 1976 and 1994 was matched with 10 control subjects.

The analysis included information on 3637 women who died; 461 died from coronary heart disease, 167 from stroke, 1985 from cancer, and the remainder from other causes. The cancer-related deaths included 425 women with breast cancer and 58 (including 5 who had used hormones) with endometrial cancer. Although similar numbers of patients in this study cohort died from coronary heart disease as from breast cancer, in the United States at large, coronary heart disease kills at least five times more women each year than breast cancer does.

The researchers reported an inverse association between current hormone use and death; after adjusting for various risk factors, they found that women who currently used hormones had a 37% lower risk of death than women who had never used hormones. However, when hormone use was continued for 10 or more years, the survival benefit was attenuated; the hormone-related reduction in risk was only 20%, primarily because of a 43% increase in breast-cancer deaths among long-term users. The survival benefit associated with hormone use was lost within five years after hormone use was stopped.

When cause of death was examined, the greatest reduction in risk (53%) was for death from coronary heart disease; the risk of cancer-related death was also reduced with hormone use, but by only 29%.

As might be expected from these numbers, women at high risk of cardiovascular disease benefited the most. Sixty-nine percent of current hormone users had at least one risk factor for cardiovascular disease. These women had a greater reduction in risk of death (49%) than did women with no cardiovascular risk factors (11%).

The researchers also examined the relation between current hormone use and mortality in women whose mother or a sister had breast cancer; among these women, the reduction in risk was 35%. Women who had no such family history had a 40% reduction in risk of death.

In an accompanying editorial, Brinton and Schairer2 suggested that, “if the protective effect of long-term use continues to dissipate with time and adverse effects on breast-cancer mortality are confirmed, the optimal duration of hormone-replacement therapy will need to be reconsidered. That the beneficial effects of hormones are dependent on recent use...