



Diagnosis of Diabetes in Older Adults

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The article by Fang et al. (1) in the current issue of *Diabetes Care* investigates the implications of the recently published 2019 Endocrine Society guideline for the diagnosis of diabetes in older adults (2). It is well established that older people in the U.S. are at high risk for undiagnosed diabetes, which was confirmed by the current study. This is an important finding since these individuals are also at high risk for diabetic complications, both microvascular and macrovascular. These points were carefully addressed in the Endocrine Society guideline.

The authors' use of the term "standard diagnostic approach" as being limited to mean use of fasting plasma glucose (FPG) and HbA_{1c} is a serious misinterpretation since the American Diabetes Association defines diabetes and prediabetes based on glucose measures including the 2-h post-glucose challenge glucose level (see Table 1 in the guideline [2]). Importantly, individuals with prediabetes are at increased risk for progression to diabetes and the development of cardiovascular disease (CVD). The FPG and HbA_{1c} categories allow easy identification of both diabetes and prediabetes. However, many people over the age of 60 affected with diabetes and prediabetes are not diagnosed unless an oral glucose tolerance test (OGTT) is performed (3). One of the major problems with using the

HbA_{1c} in older individuals is the well-established fact that the measurement of HbA_{1c} may be inaccurate in some people in this age-group because of comorbidities that can affect the life span of red blood cells in the circulation (4). Furthermore, individuals who meet criteria for diabetes based on the OGTT alone are at substantial risk of adverse CVD outcomes related to diabetes. OGTT-defined prediabetes and diabetes predict incidence of CVD and death, even after accounting for corresponding categories based on FPG (5).

Population screening demonstrates a high rate of detection of newly diagnosed diabetes. Additionally, modeling such studies suggests that early detection and treatment of diabetes can reduce long-term complications (6).

Another critically important element in this discussion is that older people with diabetes often have 10, 20, or more years of remaining productive life. Thus, preventing complications by early diagnosis and management can potentially reduce medical expenditure in the future. As a result, the early investment in diagnostic tests may be extremely small in relation to the reduction in costly complications (7).

The authors' description of the Endocrine Society guideline regarding use of the OGTT is inaccurate and misleading: "...the Endocrine Society endorsed the standard approach but also recommended

administering a 2-h oral glucose tolerance test (OGTT) to adults aged ≥ 65 years. . ." (1). In fact, the guideline reads "we suggest obtaining a 2-hour glucose post-oral glucose tolerance test measurement." The use of "suggest" was deliberate and meant to be less forceful than "recommend," which was used for many of the other items in the guideline. In addition, the OGTT item includes an important "technical remark" that advises selecting higher-risk people for OGTT testing and limiting its use via shared decision-making in other situations (2):

This recommendation is most applicable to high-risk patients with any of the following characteristics: overweight or obese, first-degree relative with diabetes, high-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander), history of cardiovascular disease, hypertension ($\geq 140/90$ mmHg or on therapy for hypertension), high-density lipoprotein cholesterol level < 35 mg/dL (0.90 mmol/L) and/or a triglyceride level > 250 mg/dL (2.82 mmol/L), sleep apnea, or physical inactivity. Shared decision-making is advised for performing this procedure in frail older people or in those for whom it may be overly burdensome.

Indeed, an important point discussed in the article by Fang et al. and stressed

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in the Endocrine Society guideline is that shared decision-making is advised for performing this procedure in frail older people or in those for whom it may be overly burdensome. This decision-making should include the patient, family caregivers, and medical personnel.

The authors fail to acknowledge these important modifications to the OGTT suggestion. If physicians actually follow the full guideline, they will likely exclude many older patients from receiving the OGTT. Thus, the authors' calculation (1) that "[a]n estimated 57.6% (~18.3 million) of older adults in the U.S. had prediabetic HbA_{1c} or FPG and would be recommended for OGTT screening under the Endocrine Society's guidelines" is inaccurate. Also, their additional analysis related to potential costs and benefits does not take these modifications into account.

Their related conclusion is also faulty: "it risks subjecting the 18.3 million older adults in the U.S. with prediabetic HbA_{1c} or FPG to the burdensome process of fasting and receiving a 2-h glucose challenge test. OGTT testing may be especially onerous in older adults, given the

high burden of comorbidities and frailty in this population..." (1). Part of the "burdensome process" described is fasting, which is obviously needed for an FPG. And this statement again ignores the technical remark in the guideline that accompanies the OGTT suggestion.

The article states that diagnosis of diabetes is no longer necessary in order to start a lifestyle and diet program (like the Diabetes Prevention Program [DPP] for people with prediabetes). However, it is clear that once patients receive a diagnosis of diabetes, they are more likely to consider changes in their lifestyle, often to avoid medications. In addition, once the diagnosis of diabetes is established, screening approaches for various complications, both microvascular and macrovascular, should be instituted, as described in detail in the guideline. Thus, making the diagnosis of diabetes makes a tremendous difference in patient management.

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