

HEMOGLOBIN A1c: NEED TO STANDARDIZE THE TERM

Claresa S. Levetan, MD, FACE

ABSTRACT

Purpose: To discuss studies that investigate the understanding of patients with diabetes and the information provided by physicians regarding the terminology and meaning of tests for glycosylated hemoglobin.

Findings: Patients with diabetes seldom know or remember the terminology for glycosylated hemoglobin assay techniques, even when they are participating in self-monitoring of blood glucose. Physicians use a variety of terms for the glycosylated hemoglobin test and are not consistent in their terminology.

Conclusion: One term for glycosylated hemoglobin assay should be used and promoted by all health-care professionals and patients. Because it is most readily remembered, "A1C" is the preferred lay term.

BACKGROUND

Patients with diabetes who know their hemoglobin A1c status and goals are able to achieve those goals and even double the decrease in hemoglobin A1c value over patients who do not know their own status and goals (1). Nevertheless, in 2001, most patients in the United States had never heard the terms hemoglobin A1c, A1C, or glycosylated hemoglobin. In nationwide surveys by the Centers for Disease Control and Prevention, almost 75% of patients with diabetes had never heard these terms, even when those patients were participating in home therapy (2,3). In a recent survey, 200 primary-care physicians who treat large numbers of patients with diabetes were found to use more than 30 different terms to describe the 3-month test to their patients (4).

REVIEW

A variety of different terms are currently used by patients with diabetes and physicians to describe glycosylated hemoglobin testing in the United States. Moreover, the College of American Pathologists found that glycosylated

hemoglobin assay techniques varied considerably among laboratories in the United States (5,6).

In anticipation of results reported from the Diabetes Control and Complications Trial and the clear need for standardization of glycosylated hemoglobin terminology and standards, the American Association of Clinical Chemists Standards Committee established a subcommittee on glycosylated hemoglobin standardization. The National Glycohemoglobin Standardization Program (NGSP) was established in 1993, with the goal of standardizing clinical laboratories to relate their individual glycohemoglobin assay results to those of the Diabetes Control and Complications Trial. The NGSP process includes calibration, certification, and proficiency testing. The NGSP recommended that uniform terminology be used for clinical purposes and that the scientific terms be used in the research and laboratory setting (7). A 2000 survey conducted by the College of American Pathologists showed that 90% of laboratories now report glycosylated hemoglobin measured as hemoglobin A1c (6).

Other surveys have shown that adoption and promotion of "A1C" as standard lay terminology have not met with the degree of success noted with standardization of the assay techniques. These studies indicate that currently most patients with diabetes still do not undergo annual hemoglobin A1c testing and do not know their hemoglobin A1c status or goals—even if they perform self-monitoring of blood glucose (SMBG) (2,3). Telephone surveys of patients with diabetes by the Centers for Disease Control and Prevention show that only approximately a third of patients who perform SMBG are aware of A1C and its meaning (2,3). Surveys by Levetan et al (8,9) in diabetes clinics found that patients who regularly perform SMBG were generally unfamiliar with A1C or other terminology for glycosylated hemoglobin. Despite this general lack of awareness, "A1C" was the term for glycosylated hemoglobin most readily recalled by a majority of patients with diabetes (9).

A survey conducted by the National Diabetes Education Program in 2000, involving 54 physicians and nurse-practitioners or physician's assistants, found that most providers were using the term "hemoglobin A1c"; the various other terms used included glycosylated hemoglobin, long-term blood sugar test, or whatever term was on the laboratory report (written communication from Rachel Greenberg, Hager-Sharp/NDEP). No physician in

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the survey group objected to promoting the single term A1C.

Thus, patient recall tests and physician surveys have shown that A1C is the most easily remembered and commonly used terminology for glycosylated hemoglobin. Accordingly, for clinical care and patient education programs, use of the term "A1C" has been recommended by the NGSP (10).

CONCLUSION

On the basis of these findings, the National Diabetes Education Program and its 26 partnering organizations recommend that "A1C" be adopted as the official lay term for glycosylated hemoglobin testing.

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