COMMENT ON SELVIN

The Glucose Management Indicator: Time to Change Course? Diabetes Care 2024;47:906–914

Richard M. Bergenstal[1] *and Roy W. Beck*[2]

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In a Perspective article in this issue of *Diabetes Care*, Dr. Selvin (1) suggests that the glucose management indicator (GMI) is not a useful measure for glycemic management, since it often differs from laboratory-measured HbA_{1c}. As noted by Dr. Selvin, "Nonglycemic factors can influence HbA_{1c}, including red blood cell turnover, other red blood cell characteristics, and genetic variation in hemoglobin. These nonglycemic factors can affect the association of HbA_{1c} with true average glucose exposure." We fully agree with this statement. It explains the discordance between laboratory-measured HbA_{1c} and a continuous glucose monitoring (CGM) estimate of HbA_{1c} from mean glucose, which we termed the GMI (2). Just as Dr. Selvin makes the case that GMI does not "perform well as a substitute for HbA_{1c}," one could use the same data to make the case that HbA_{1c} does not perform well as a substitute for the true glucose exposure as measured by CGM.

We proposed the term GMI (2) in response to a request from the U.S. Food and Drug Administration to use a term other than estimated HbA_{1c}, as patients found the discordance between estimated HbA_{1c} and measured HbA_{1c} to be confusing. Thus, we proposed a distinctly different term (GMI) to refer to what the HbA_{1c} level would be expected to be based solely on mean glucose.

We agree with Dr. Selvin that just referencing mean glucose potentially would be better than transforming mean glucose values into GMI. However, at this time, most patients and many clinicians do not have a perspective on how to interpret mean glucose and how much of a change in mean glucose is clinically meaningful, whereas with HbA_{1c}, which has been used in patient management for decades, this is better understood. However, after decades of using HbA_{1c} as our guide to clinical management, we are far from achieving our desired glycemic outcomes (3). While we believe that the GMI fills a need currently for the interpretation of CGM data, we will welcome the day when CGM-measured mean glucose is sufficiently well understood that there is no need to convert it to GMI for interpretation of the true glucose exposure, which Brownlee (4) outlined as the driving force of diabetes microvascular complications.

There is now a U.S. Food and Drug Administration quality designation to help ensure that the current generation of CGM sensors are sufficiently accurate and reliable to provide acceptable data for clinical decision-making (5). Use of CGM supports precision diabetes management by utilizing metrics such as time in target range, time below target range, mean glucose (or GMI for now), and coefficient of variation, along with a visualized glucose profile to personalize medication and lifestyle adjustments. We see the GMI as the bridge to move from the use of primarily HbA_{1c} for diabetes management to the use of CGM metrics and profiles, along with the HbA_{1c} when deemed helpful, for the personalized management of diabetes. Thus, it is not time to change course on the use of GMI but to use GMI to help cross over into more precise diabetes management.

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[1]*International Diabetes Center, HealthPartners Institute, Minneapolis, MN*
[2]*Jaeb Center for Health Research, Tampa, FL*

Corresponding author: Richard M. Bergenstal, richard.bergenstal@parknicollet.com

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