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Glycosylated Hemoglobin and Cardiovascular Risk in Nondiabetic Adults

Even within the normal range, HbA_{1c} level correlated with diabetes risk.

Glycosylated hemoglobin (HbA_{1c}) is used most commonly as an indicator of glycemic control in patients with known diabetes. But do variations of HbA_{1c} level within the "normal" range predict diabetes and other clinical outcomes? To answer this question, researchers measured HbA_{1c} in 11,000 adults (mean age, 57) who had no histories of diabetes or cardiovascular disease and correlated HbA_{1c} levels with long-term outcomes.

When participants were grouped by baseline HbA_{1c} level, 15-year cumulative incidences of self-reported diabetes ranged from 6% for those with HbA_{1c} <5.0% to 44% for those with HbA_{1c} 6.0% to 6.5%. This association persisted after adjustment for baseline fasting glucose levels and other variables. Baseline HbA_{1c} also was associated with 15-year risk for cardiovascular disease: For example, those with HbA_{1c} levels of 6.0% to 6.5% had twofold higher 15-year risk for both coronary disease and stroke than did those with HbA_{1c} levels of 5.0% to 5.5%. However, the association between baseline HbA_{1c} level and mortality was J-shaped: Compared with HbA_{1c} of 5.0% to 5.5%, those with either lower or higher HbA_{1c} levels had greater risk for death from any cause.

Comment: These correlations between relatively normal HbA_{1c} levels and long-term cardiovascular outcomes are interesting, but their relevance for clinical practice is unclear. For example, we don't know whether interventions that could lower HbA_{1c} from 6% to 5% in nondiabetic adults actually would influence long-term cardiovascular morbidity or mortality.

— ***Allan S. Brett, MD***

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