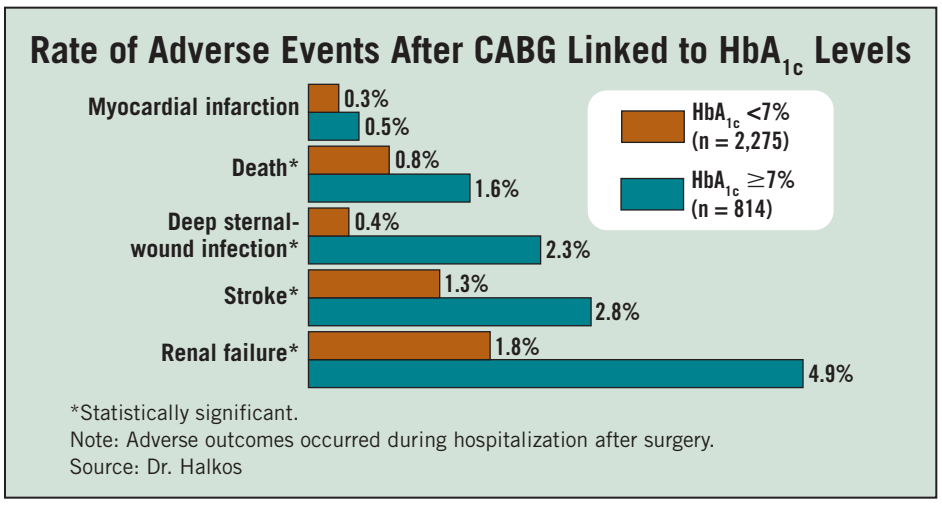

ELSEVIER GLOBAL MEDICAL NEWS

HbA_{1c} Levels Reliably Predict Coronary Bypass Outcomes

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WASHINGTON — Serum level of hemoglobin A_{1c} was better than diabetic status for identifying patients with the highest risk of bad outcomes following coronary artery bypass surgery, in a review of more than 3,000 patients.

"A hemoglobin A_{1c} [HbA_{1c}] level of 7% or higher was a powerful predictor of in-hospital mortality or morbidity after elective coronary artery bypass surgery," Dr. Michael E. Halkos said at the annual meeting of the American Association for Thoracic Surgery. Mortality and morbidity in patients with an HbA_{1c} level lower than 7% were similar to those of patients without diabetes, said Dr. Halkos, of the division of cardiothoracic surgery at Emory University, Atlanta.

These findings raise the possibility of delaying elective coronary surgery in patients with poorly controlled diabetes until their control improves and their serum level of HbA_{1c} drops, he said.

The review included 3,555 consecutive patients who underwent primary, elective coronary artery bypass graft (CABG) at the university during April 2002-June 2006. The series included 3,089 patients whose records included a measure of serum HbA_{1c} taken shortly before surgery. All patients were treated with a uniform and strict insulin-infusion regimen during the intraoperative and perioperative periods that was designed to maintain blood glucose levels at less than 120 mg/dL.

A total of 2,275 patients (74%) had a preoperative HbA_{1c} level lower than 7%, and 814 (26%) had a level of 7% or higher. In addition, 1,240 patients (40%) were diagnosed with diabetes or had a history of diabetes before surgery, and 1,849 (60%) had no history of diabetes. Among the patients with a history of diabetes, 42% were well controlled at the time of surgery, with an HbA_{1c} lower than 7%.

Surgical outcomes were assessed by the incidence of five adverse events during hospitalization following surgery: death, myocardial infarction, stroke, renal failure, and deep sternal-wound infection.

The incidence of four of these five adverse outcomes were all significantly reduced among the patients who had surgery with an HbA_{1c} level lower than 7%, compared with those whose level was 7% or higher. The only outcome that was not significantly less was myocardial infarction. (See box.)

In contrast, when patients with and without a history of diabetes were compared, stroke was the only adverse outcome that was significantly more common among the patients with diabetes, Dr. Halkos said. In addition, when the incidence of adverse events was tallied only among well-controlled patients with diabetes (those with an HbA_{1c} level lower than 7%), the rates were not significantly different than the rates among the patients without diabetes.

Another analysis of the data used HbA_{1c} levels as a continuous variable, instead of a dichotomous variable with the cut point at 7%. A multivariate analysis that adjusted for baseline differences in the patients showed that every 1% increase in HbA_{1c} level was linked with a statistically significant increase in the incidence of four of the five adverse outcomes studied following CABG. The only outcome that did not show a significant relationship was stroke. ■

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