Oral Glucose Test Is Best Before Vascular Surgery

BY MITCHELL L. ZOLER
Philadelphia Bureau

VIENNA — An oral glucose tolerance test identified impaired glucose hemostasis in patients awaiting elective noncardiac vascular surgery more effectively than did a fasting plasma glucose test.

It’s important to screen these patients for diabetes and impaired glucose tolerance because these are common complications in patients awaiting vascular surgery. The prevalence of diabetes was 11% in a group of 404 patients from one medical center, Dr. Martin Dunkelgrun and associates reported in a poster at the annual congress of the European Society of Cardiology. About three-quarters of the affected patients would have been missed if oral glucose tolerance tests (OGTT) had not been done, Dr. Dunkelgrun said in an interview. “An OGTT should be routinely done for all patients scheduled for elective, noncardiac, vascular surgery,” said Dr. Dunkelgrun, a researcher at Erasmus University, Rotterdam, the Netherlands.

The prospective study included 404 patients with no history of diabetes or impaired glucose hemostasis who were scheduled for elective, noncardiac vascular surgery at Erasmus University, Rotterdam, the Netherlands.

In the patients who died, compared with those who survived (median 73 years and 67 years, respectively), they also had significantly higher scores on the European System for Cardiac Operative Risk Evaluation (EuroSCORE) than did survivors (median 6.6 and 2.9, respectively).

In a Kaplan Meier analysis for survival, patients in the highest tertile for NT-proBNP showed the highest mortality, compared with those in the lower two tertiles (12.8% vs. 2.2%).

A multivariate model that included NT-proBNP, EuroSCORE, age, gender, previous myocardial infarction, hypertension, diabetes, smoking, and eGFR showed that only elevated levels of NT-proBNP and older age remained significant predictors of mortality.

The study’s primary end point was death from any cause, either within 30 days of surgery or after any interval if the patient was not discharged from the hospital. Results were adjusted for gender, peripheral vascular disease, chronic obstructive pulmonary disease, and preoperative renal failure. MI, and stroke.

The overall unadjusted mortality rate was 1.6%, but was significantly higher (2.4%) among patients with metabolic syndrome, and significantly lower (0.9%) among patients without metabolic syndrome.

Several other factors also increased the risk of mortality after CABG. These included age older than 75 years (relative risk 2.5), and emergent surgery (RR 6.4). TEG use was also associated with a significant increase in the rate of fresh frozen plasma used both intraoperatively and postoperatively, but this effect was more than counterbalanced by increased use of cryoprecipitate and platelets during the pre-TEG era.

Because cyanotic infants bleed more than acyanotic babies, the analyst also examined the impact of TEG among infants in each of these subgroups. In the pre-TEG era, 19% of the infants were cyanotic; in the TEG era, 35% were cyanotic.

Among all patients, those treated using TEG had significantly less total blood product use postoperatively, compared with patients treated before TEG. The blood products measured were fresh-frozen plasma, cryoprecipitate, platelets, and packed red cells. TEG use led to significant increases in the volume of fresh frozen plasma used both intraoperatively and postoperatively, but this effect was more than counterbalanced by increased use of cryoprecipitate and platelets during the pre-TEG era. Use of TEG was also linked with a significant reduction in the volume of fluid removed by the chest tube, measured at 1, 2, and 24 hours following surgery.

In the acyanotic patients, TEG use was also linked with a significant reduction in the total volume of blood products infused, and with a reduction in the volume of fluid removed by the chest tube postoperatively. In contrast, in cyanotic patients, TEG use was linked with an increased volume of blood products, which was caused by a substantially increased need for fresh frozen plasma in the TEG group. Despite the increased use of fresh-frozen plasma, chest tube volume was less with TEG monitoring at all time points measured.

“TEG was equally effective for correcting hemostasis in the cyanotic and acyanotic patients,” said Dr. Mendeloff, who is surgical director of the congenital heart disease program at Medical City Hospital in Dallas.

Elevated NT-ProBNP Predicts Death After Cardiac Surgery

BY DOUG BRUNK
San Diego Bureau

SAN DIEGO — Preoperative elevated levels of N-terminal pro-B-type natriuretic peptide are an excellent predictor of mortality in patients undergoing cardiac surgery, even when adjusted for currently used scoring systems, Dr. Brian H. Cuthbertson reported during a poster session at the annual meeting of the American Association for Clinical Chemistry.

Dr. Cuthbertson and his associates measured the preoperative NT-proBNP levels from blood samples in 541 consecutive patients who underwent cardiac surgery at Aberdeen Royal Infirmary, Aberdeen, Scotland. They followed the patients postoperatively for a median of 18 months to assess mortality.

The researchers found that the median NT-proBNP levels were significantly higher in the patients who died, compared with those who survived (1,173 pg/ml vs. 491 pg/ml).

In addition, patients who died were significantly older than those who survived (median 73 years and 67 years, respectively). Because cyanotic infants bleed more than acyanotic babies, the analyst also examined the impact of TEG among infants in each of these subgroups. In the pre-TEG era, 19% of the infants were cyanotic; in the TEG era, 35% were cyanotic.

Among all patients, those treated using TEG had significantly less total blood product use postoperatively, compared with patients treated before TEG. The blood products measured were fresh-frozen plasma, cryoprecipitate, platelets, and packed red cells. TEG use led to significant increases in the volume of fresh frozen plasma used both intraoperatively and postoperatively, but this effect was more than counterbalanced by increased use of cryoprecipitate and platelets during the pre-TEG era. Use of TEG was also linked with a significant reduction in the volume of fluid removed by the chest tube, measured at 1, 2, and 24 hours following surgery.

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Post-CABG Risk of Mortality

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The overall unadjusted mortality rate was 1.6%, but was significantly higher (2.4%) among patients with metabolic syndrome, and significantly lower (0.9%) among patients without metabolic syndrome.

Several other factors also increased the risk of mortality after CABG. These included age older than 75 years (relative risk 2.5), BMI less than 18.5 kg/m² (RR 10.3), MI within 7 days before surgery (RR 4.0), urgent surgery (RR 2.5), and emergent surgery (RR 6.4).