

Embargoed until:
Monday, June 12
5:30 pm EDT

Contact: Diane Tuncer, 703-299-5510
Elizabeth Magsig, 703-549-1500, ext 2146
NEWS ROOM June 9 -13, 2006:
East Registration, Washington Convention Center
(202) 249-4017; Fax: (202) 249-4024

HIGH BLOOD GLUCOSE LEVELS ASSOCIATED WITH INCREASED MORTALITY IN ICU

Most Severe Impact Seen in Those without Diagnosed Diabetes and Those with CVD

Washington, DC (June 12, 2006) – A groundbreaking study of 216,000 critically ill patients conducted by the Veterans Affairs Inpatient Evaluation Center based in Cincinnati has demonstrated that hyperglycemia (high blood glucose levels) is associated with increased death in patients in intensive care units, according to a report presented here today at the American Diabetes Association's 66th Annual Scientific Sessions.

“The increased deaths associated with hyperglycemia in intensive care units was highest in those without diagnosed diabetes and in those admitted with cardiovascular disorders, such as heart attacks, unstable angina, and strokes,” said Mercedes Falciglia, MD, Assistant Professor of Medicine, Division of Endocrinology, University of Cincinnati College of Medicine, Ohio, in a recent interview. A staff endocrinologist at the Cincinnati Veterans Affairs Medical Center, Dr. Falciglia is the lead author of the study.

In the study, hyperglycemia was found to be an independent predictor of mortality starting at only one milligram per deciliter above normal glucose levels. The impact of high blood glucose levels was variable but increased death to as high as 15 times that which would be expected in stroke patients with the highest blood glucose levels.

However, in some conditions, such as chronic obstructive pulmonary disease (COPD) and liver failure, high blood glucose levels did not appear to be linked to mortality.

“These findings suggest that different disease states are variably affected by hyperglycemia, with the strongest association in individuals with cardiovascular disorders,” said Dr. Falciglia.

Hyperglycemia independently predicted mortality in the medical, surgical, and cardiac ICUs.

Hyperglycemia has previously been shown to be associated with increased mortality in hospitalized patients in smaller trials. However, the potential benefits of trying to reduce high blood glucose levels have been questioned because results from intervention trials with intensive insulin therapy have been variable, with some trials showing improved outcomes with treatment and others no effect.

- more -

National Office

1701 North Beauregard Street
Alexandria, VA 22311
Tel: 703-549-1500

Diabetes Information

call 1-800-DIABETES (1-800-342-2383)
online www.diabetes.org
The Association gratefully accepts gifts through your will.

The Mission of the American

Diabetes Association is to prevent and cure diabetes and to improve the lives of all people affected by diabetes.

Critically Ill – page 2

“Based on the outcome of this large study, we believe that the variable results of those studies may be due to the unique ways that high blood glucose may or may not affect mortality in different types of diseases – which can be uniquely revealed through large and diverse databases such as those generated by the network of Veterans Affairs hospital ICUs,” said Dr. Falciglia

To address this question, researchers evaluated the independent association between mean blood glucose and mortality in 216,000 severely ill individuals admitted to 177 Veterans Affairs ICUs. In a validated mathematical model, the risk of death for each patient was calculated based on the diagnosis that brought them to the hospital, presence of any other diseases, lab test results, and age. In a second mathematical model, the independent link between an individual’s average blood glucose during their ICU stay and their risk of mortality was calculated.

Normal blood glucose levels are 70 to 110 mg/dl. Hyperglycemia was an independent predictor of mortality starting at 111 mg/dl.

The effect was greatest in those admitted with acute myocardial infarction, unstable angina, and stroke. In patients admitted due to heart attack, hyperglycemia increased the risk of death from 1.6 to 5 times what would be expected from others of similar age and comorbidities; with a stroke it raised risk from 3.4 to 15.1 times; and with unstable angina it raised risk from 1.7 to 6.2 times. A significant but weaker effect was seen in patients with sepsis, pneumonia, and pulmonary embolism. Hyperglycemia was not found to be associated with mortality in diseases such as COPD and hepatic failure.

“These differential effects may explain the inconsistencies seen in the results of intervention trials to control inpatient hyperglycemia,” said Dr. Falciglia. “Since such randomized controlled trials are expensive and difficult to organize, it may be a wise use of resources in future trials to consider disease type and focus on those populations that appear to be at greatest risk.”

“This effect seen was also greatest in patients without diagnosed diabetes, a finding that deserves further study because it is not clear why hyperglycemia occurs in hospitalized patients who do not have diagnosed diabetes nor why they may have worse outcomes in some cases than people with diagnosed diabetes,” said Dr. Falciglia

It is estimated that 6.2 million Americans have undiagnosed diabetes. Many never see a doctor and do not discover they have the disease until diabetes-related complications such as a heart attack or stroke hits. Unfortunately, this awareness comes too late to delay or prevent the onset of serious complications.

- more -

National Office

1701 North Beauregard Street
Alexandria, VA 22311
Tel: 703-549-1500

Diabetes Information

call 1-800-DIABETES (1-800-342-2383)
online www.diabetes.org
The Association gratefully accepts gifts through your will.

The Mission of the American

Diabetes Association is to prevent and cure diabetes and to improve the lives of all people affected by diabetes.

Critically Ill – page 3

“All patients should have their blood glucose levels monitored when they are admitted to an intensive care unit because hyperglycemia occurs in one-third of ICU patients,” said Dr. Falciglia.

Some 20.8 million children and adults in the United States have diabetes, a group of serious diseases characterized by high blood glucose levels that result from defects in the body's ability to produce and/or use insulin. Diabetes can lead to severely debilitating or fatal complications, such as heart disease, blindness, kidney disease, and amputations. It is the fifth leading cause of death by disease in the U.S.

The American Diabetes Association is the nation's leading voluntary health organization supporting diabetes research, information and advocacy. Founded in 1940, the Association has offices in every region of the country, providing services to hundreds of communities. For more information, please call the American Diabetes Association at 1-800-DIABETES (1-800-342-2383) or visit www.diabetes.org. Information from both these sources is available in English and Spanish.

###

Late Breaking Clinical Studies Oral Session

National Office

1701 North Beauregard Street
Alexandria, VA 22311
Tel: 703-549-1500

Diabetes Information

call 1-800-DIABETES (1-800-342-2383)
online www.diabetes.org
The Association gratefully accepts gifts through your will.

The Mission of the American

Diabetes Association is to prevent and cure diabetes and to improve the lives of all people affected by diabetes.