

# Hypoalbuminemia May Predict HF Mortality

BY MITCHEL L. ZOLER  
Philadelphia Bureau

NEW ORLEANS — Patients with heart failure who also have hypoalbuminemia have a two- to threefold increased risk of death, compared with patients with normal serum albumin levels, according to results from a study in about 1,000 patients.

It's possible that this elevated mortality risk may be controlled using nutritional supplements or treatments aimed at cutting the inflammation associated with hypoalbuminemia, Tamara Horwich, M.D., said at the annual scientific sessions of the American Heart Association.

It's unclear what links hypoalbuminemia with worse survival during heart failure (HF), but several candidate mechanisms exist. These include hemodilution, cardiac cachexia, biventricular HF, reduced colloid osmotic pressure causing pulmonary edema, and reduced tolerability and use of optimal medical therapy, said Dr. Horwich of the University of California, Los Angeles.

Prior studies had linked hypoalbuminemia with a higher risk of death in a variety of disease states, including cancer, end-stage renal disease, infections, and cardiac surgery. But until now, few studies had examined whether a similar association exists in patients with HF.

To assess this potential link, Dr. Horwich and her associates reviewed case records for 1,162 HF patients who were treated at UCLA Medical Center from December 1983 through June 2004. Some patients were excluded because their left ventricular ejection fraction was greater than 40% or they had inadequate follow-up. The study focused on the 1,039 eligible patients who remained. Their average age was 52 years, and their mean ejection fraction was 23%.

Patients were diagnosed with hypoalbuminemia if their serum albumin was less than 3.4 g/dL. About 25% of the patients in this study had hypoalbuminemia, a prevalence consistent with reports from prior studies of HF patients. Low albumin levels were most prevalent in lean patients, with a prevalence of 29%, but hypoalbuminemia was also common in overweight and obese patients, with prevalences of 15% and 20%, respectively.

The 1-year survival rate in patients who were hypoalbuminemic at baseline was 68%, compared with more than 80% in those with normal baseline levels.

In a multivariate analysis that adjusted for potential confounders, including age, sex, and body mass index, patients who had low serum albumin were 2.8-fold more likely to die, compared with patients with a serum albumin level within the normal range, Dr. Horwich said. ■

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# Chronic Methamphetamine Use Linked With Cardiomyopathy

BY MITCHEL L. ZOLER  
Philadelphia Bureau

NEW ORLEANS — Chronic use of methamphetamine can lead to nonischemic, dilated cardiomyopathy and profound left-ventricular dysfunction, according to a study of 53 methamphetamine users seen at a single medical center in California.

"To our knowledge, this is the first study of its type to examine the relationship between chronic methamphetamine use and its effect on the heart," Melissa R. Robinson, M.D., reported in a poster at the annual scientific sessions of the American Heart Association.

"In contrast with cocaine, long-term methamphetamine use seems to have a direct, cardiotoxic effect, and promotes the development of severe, nonischemic, dilated cardiomyopathy," said Dr. Robinson of the department of internal medicine at the University of California, Davis. Although the number of chronic users of methamphetamine is not known, a 2001 survey estimated that more than 5 million people in the United States had tried the drug, she said.

Her review started with 226 patients who were either hospitalized at the UC Davis Medical Center or seen in its emergency department during 1993-2002 and reported using methamphetamine and were diagnosed with either cardiomyopathy or heart failure. This list of patients was then pared to exclude those with another possible explanation for their heart disease, including a history of significant alcohol use (at least four drinks per day for at least 5 years), alcoholic cir-

rhosis, cocaine use, or severe coronary artery disease.

These exclusions left 53 patients who were methamphetamine users and had no clear etiology for their cardiomyopathy or heart failure. The average duration of drug use among these 53 patients was 5 years.

Their average age was 46 years, and 43% were younger than 45. Their average left-ventricular end-diastolic dimension was 66.3 mm, and 87% had an end-diastolic dimension of more than 55 mm, indicating severe dilated cardiomyopathy. Echocardiography was done on 46 patients, who had an average left-ventricular ejection fraction of 25%; 35 of the 46 patients (76%) had an ejection fraction of less than 30%.

Several of the patients had severe complications while they were followed at UC Davis. Five patients had strokes, another five had recurrent ventricular arrhythmias that required implantation of a cardioverter defibrillator, and six had sudden deaths. "These clinical findings were unusual given the relatively young age of these patients," Dr. Robinson said.

Four patients had resolution of their cardiomyopathy after they stopped using methamphetamine.

Methamphetamine probably triggers cardiomyopathy by causing a chronic excess of catecholamines, similar to what happens in patients with a pheochromocytoma, an adrenal gland tumor, Dr. Robinson told this newspaper. The effects of methamphetamine are exacerbated by its relatively long half-life, 8-12 hours. In contrast, the half-life of cocaine is 30-60 minutes. ■

# Social Factors Predict Onset of Depression in Heart Failure

BY BRUCE JANCIN  
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NEW ORLEANS — A brief checklist of social and health factors predicts onset of depressive symptoms in heart failure patients, Edward P. Havranek, M.D., said at the annual scientific sessions of the American Heart Association.

The four-item checklist consists of living alone, alcohol abuse, poor health status as measured by the Kansas City Cardiomyopathy Questionnaire (KCCQ), and the patient's perception that his or her medical care poses a substantial economic burden. A heart failure patient's risk of developing depression within 1 year rises in stepwise fashion as the number of applicable risk factors increases (see box), according to Dr. Havranek of Denver Health Medical Center.

The checklist was developed as part of a multicenter prospective

cohort study involving 245 outpatients with heart failure (HF) and a left ventricular ejection fraction less than 40% who were free of depression at baseline. During 1 year of follow-up, 21.5% of patients developed clinically significant symptoms of depression as defined by a score above 0.06 on the widely used Medical Outcomes Study Depression Scale.

Multivariate analysis identified four independent predictors of onset of depression in this HF population. Alcohol abuse was associated with a 3-fold elevated risk, living alone conferred a 2.8-fold risk, and medical care being seen by the patient as a substantial economic burden carried a 2.9-fold increased risk. In addition, the risk of depression rose by 22% for each 10-point decrement on the KCCQ. The study results were published in December (*J. Am. Coll. Cardiol.* 2004;44:2333-8).

The KCCQ is a self-adminis-

tered 23-item multiple-choice instrument that inquires about the impact of HF upon a patient's life. For example, the KCCQ asks patients how much swelling in their feet, ankles, or legs has bothered them in the last 2 weeks, how many times during that period they have been forced by shortness of breath to sleep sitting in a chair propped up by at

least three pillows, and how much HF has limited their enjoyment of life during the last 2 weeks.

The range of possible scores on the KCCQ is 0-100. Higher scores indicate less disease impact. Study participants with a baseline score greater than 75 had a 13% incidence of depression onset within 1 year. The in-

cidence of depression rose to 20% among those with a baseline score of 51-75, 42% in those who scored 26-50, and 44% with a score of 25 or less.

The impetus for developing the social/health risk factor checklist as a tool for predicting onset of depression stems from prior studies that established depression in patients with HF is quite common and is associated in this population with decline in health status, more frequent hospitalization, and increased mortality.

"Routine screening of high-risk patients with heart failure followed by psychosocial intervention to reduce the incidence of depression is a strategy that deserves study," Dr. Havranek observed. "This would be consistent with the Institute of Medicine position that one of the changes necessary for American health care is for the system to anticipate patient needs rather than simply to react to events." ■

