



Clinical Digest

ONLINE EDITION

CARDIOVASCULAR DISEASE

Watch Out for Recurrent Cardiac Events

The number of prior hospitalizations for cardiac events is a “simple but powerful predictor” of mortality risk for patients with heart failure, say researchers from Institute for Clinical Evaluating Sciences, University Health Network, Mount Sinai Hospital, St. Michael’s Hospital, and University of Toronto, all in Toronto, Canada.

They reached this conclusion after reviewing data on 9,138 patients, with a mean age of 75.3 years, who were newly admitted with clinical heart failure and discharged from one of 103 Canadian acute care hospitals between April 1, 1999 and March 30, 2001. The researchers analyzed patients’ hospitalizations, in-hospital complications, and mortality for the following five years.

Follow-up data indicated that patients’ mortality risk increased progressively and independently with each recurrent cardiac event. One episode of recurrent heart failure more than doubled the risk of mortality, two tripled it, three quadrupled it, and four or more increased it fivefold. Recurrent cardiovascular events were associated with even higher adjusted relative mortality rates. One such event increased mortality risk by a factor of three, two events by a factor of five, three events by a factor of more than six, and four or more events by a factor of nine.

The researchers say that these findings “support the concept that recurrent acute heart failure and cardiovascular disease events induce discrete insults in a progressive, step-

wise manner with marked prognostic implications.” They describe cardiac events as “critically important predictors of prognosis” that should be ascertained carefully and routinely.

Source: *Am J Med.* 2009;122(2):162–169.
doi:10.1016/j.amjmed.2008.08.026.

DIABETES MANAGEMENT

A Benefit of Ambulatory BP Monitoring in Patients with Diabetes

Ambulatory blood pressure monitoring (ABPM) provides a number of variables—such as 24-hour blood pressure (BP) and pulse pressure, abnormal sleep dipping patterns, and the ambulatory arterial stiffness index (AASI)—that are valuable for assessing mortality risk. In fact, several studies have shown that ABPM is a cut above office BP measurements in predicting mortality in various patient populations. So can ABPM help to predict mortality in older individuals with diabetes?

That was the primary question investigated by researchers from Columbia University and New York State Psychiatric Institute, both in New York, NY; State University of New York Upstate Medical University and the Syracuse VAMC, both in Syracuse, NY; Hebrew Home for the Aged at Riverdale, Bronx, NY; and Stony Brook University, Stony Brook, NY in a study involving a sample of 1,178 elderly, diabetic participants from the Informatics for Diabetes Education and Telemedicine (IDEATel) study. The researchers also sought to examine the hypothesis that

albuminuria mediates the association between pulse pressure and mortality in older individuals with diabetes.

They compared the participants’ baseline data, collected in 2000 and 2001 (when participants were aged 55 or older), to their mortality data, collected through August 26, 2008. The baseline data included measurement of spot urinary albumin to creatinine ratio, office BP, vital status assessments, and 24 hours of ABPM. The ABPM provided such variables as 24-hour BP and pulse pressure, sleep to wake ratios, and the AASI.

There were 287 deaths among the participants; death certificates were available for 215 participants and indicated that 110 of them died from cardiovascular causes. In an initial analysis using only non-ABPM variables, the researchers found that office heart rate and albuminuria were independent predictors of all-cause and cardiovascular mortality. Next, the researchers assessed whether any of the ABPM variables improved the prediction of mortality when added to the non-ABPM variables. This assessment indicated that abnormal sleep dipping patterns (as demonstrated by sleep to wake ratio) and arterial stiffness (as demonstrated by the AASI) improved the prediction of all-cause mortality significantly. Abnormal sleep dipping patterns also improved the prediction of cardiovascular mortality significantly.

The researchers note that the mortality predicting variables of abnormal sleep dipping patterns, arterial stiffness, and albuminuria all may have a common cause in diabetic end-organ damage. They speculate that the ABPM-provided variable of 24-hour heart rate may have failed

to improve the prediction of mortality because it was strongly correlated with office heart rate. Finally, they say, their results suggest that albuminuria,

or another closely related variable that has yet to be identified, “may mediate the association between elevated BP and higher mortality.” ●

Source: *Hypertension*. 2009;53(2):120–127.
doi:10.1161/HYPERTENSIONAHA.108.118398.