

Study evaluates blood potassium levels after heart attack and risk of in-hospital mortality

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Patients hospitalized after a heart attack who had blood potassium levels of between 3.5 and less than 4.5 mEq/L (milliEquivalents per liter) had a lower risk of death than patients with potassium levels that were higher or lower than this range, according to a study in the January 11 issue of *JAMA*. Clinical practice guidelines recommend maintaining serum potassium levels between 4.0 and 5.0 mEq/L in patients after a heart attack.

"Potassium homeostasis [equilibrium] is critical to prevent adverse events in patients with cardiovascular disease. Several studies have demonstrated a relationship between low serum potassium levels, usually less than 3.5 mEq/L, and the risk of ventricular arrhythmias in patients with [acute myocardial infarction](#) [AMI; [heart attack](#)]. On the basis of these studies, experts and professional societies have recommended maintaining potassium levels between 4.0 and 5.0 mEq/L, or even 4.5 to 5.5 mEq/L, in AMI patients. However, most prior studies were conducted before the routine use of beta-blockers, reperfusion therapy, and early invasive management in eligible patients with AMI," according to background information in the article. In addition, these studies were small. "Therefore, there is a lack of current, adequately powered studies that define the optimal range of serum potassium levels with respect to mortality and other important [clinical outcomes](#) in patients with AMI."

Abhinav Goyal, M.D., M.H.S., of the Emory Rollins School of Public Health, Atlanta, and colleagues conducted a study to determine the relationship between serum potassium levels and in-hospital mortality in

AMI patients in the era of beta-blocker and reperfusion therapy. The study included 38,689 patients with biomarker-confirmed AMI, admitted to 67 U.S. hospitals between January 2000 and December 2008. All patients had in-hospital serum potassium measurements and were categorized by average postadmission serum potassium level.

Of the study patients, 2,679 (6.9 percent) died during hospitalization. The researchers found that compared with the reference group (3.5-

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