

Research warns of risks of low potassium in heart failure patients with chronic kidney disease

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New research from the University of Alabama at Birmingham (UAB) says low potassium levels produce an increased risk of death or hospitalization in patients with heart failure and chronic kidney disease (CKD).

In findings reported in January in *Circulation: Heart Failure*, a journal of the American Heart Association, the researchers say that even a mild decrease in serum [potassium level](#) increased the risk of death in this patient group.

"Hypokalemia, or low potassium, is common in heart-failure patients and is associated with poor outcomes, as is [chronic kidney disease](#)," said C. Barrett Bowling, M.D., a fellow in the UAB Division of Gerontology, Geriatrics and Palliative Care. "But little is known about the prevalence and effect of hypokalemia in heart-failure patients who also have CKD."

Bowling, a graduate of the UAB Internal Medicine residency program, said these findings indicate that in patients with heart failure and CKD the serum potassium levels should be monitored routinely and carefully maintained within a safe range.

The UAB researchers studied data from 1,044 patients with heart failure and CKD in the Digitalis Investigation Group study, sponsored by the National Heart, Lung and Blood Institute, one of the National Institutes

of Health. Normal potassium levels were expressed at between 4 and 4.9 mEq/L. Mild hypokalemia was defined as between 3.5 to 3.9 mEq/L and low hypokalemia as below 3.5 mEq/L.

Death occurred in 48 percent of the patients with hypokalemia during the 57-month follow-up period, compared with only 36 percent of patients with normal potassium. The vast majority of subjects, 87 percent, had mild hypokalemia. Hospitalization also was slightly higher for subjects with low potassium, 59 percent compared with 53 percent for those with normal potassium levels.

"It has long been considered that high potassium levels were more common in heart-failure patients with CKD," said Ali Ahmed, M.D., senior author of the study and associate professor of medicine in the Divisions of Gerontology, Geriatrics and Palliative Care and Cardiovascular Disease. "Our findings indicate that low potassium may be even more common in these patients, and clinicians need to be aware of the risks associated with even mildly low potassium levels and monitor and treat their patients accordingly."

Provided by University of Alabama at Birmingham

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