

## Study shows short-term kidney failure in heart patients may not be as detrimental

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New research led by UC Health cardiologists shows that while short-term worsening kidney function is frequent among patients with heart failure, these patients also have better outcomes than those who have persistent kidney failure.

These findings, published in the July 2010 edition of the *Journal of Cardiac Failure*, could lead to more effective interventions and treatments for patients with [heart failure](#) that develop kidney problems or failure as well.

"Worsening renal function is a warning complication in patients with acute heart failure syndrome," says Andrew Burger, MD, UC Health cardiologist and co-investigator in the study. "Between 30 and 50 percent of patients hospitalized for acute heart failure have further worsening of renal function during hospitalization, but there is very little data available about the clinical implication of transient versus persistent worsening of renal function in this setting.

"This study is the first of its kind to look at this relationship to help physicians assess outcomes and possibly determine the most efficient way to treat heart patients who develop [kidney failure](#) at any degree."

Researchers studied 467 patients with acute heart failure syndrome and their creatinine measurements on days 2, 5, 14 and 30 of the study.

Creatinine is a product of creatine phosphate, or energy phosphate, in

the muscle and brain. It is filtered out of the blood by the kidneys. If the filtering of the kidney is deficient, blood levels rise, and creatinine levels in blood and urine are used to calculate the kidney's function.

In this study, worsening renal function was defined as persistent when serum creatinine remained greater than 0.5 mg/dL (milligrams per deciliter) above baseline throughout to day 30 and transient when the elevated creatinine levels decreased to less than 0.5 mg/dL above baseline within the 30-day period.

"Worsening renal function occurred in 115 patients—39 of those cases were considered transient," says Burger.

He adds that researchers saw death in 17.3 percent of patients without worsening renal function, 20.5 percent of patients with transient worsening dysfunction and 46.1 percent of patients with persistent [renal dysfunction](#).

"The patients with no change in [renal function](#) and transient dysfunction have the same outcome, while patients with persistent renal dysfunction are more like to die," Burger says. "Chronic heart failure encompasses an important interaction between the heart and the kidneys, and renal dysfunction often accompanies heart failure.

"These findings give cardiologists some insight into the degree of renal dysfunction and its association with mortality in both stable and acute heart failure syndrome. Hopefully, these results will lead to further studies that may help in determining better interventions and outcomes for patients with acute heart failure."

Provided by University of Cincinnati Academic Health Center

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