

# Study identifies factors leading to hospital admission for heart failure

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Nearly two out of three patients have one or more precipitating factors that may contribute to hospital admissions nationwide for heart failure, according to a new UCLA study. Pneumonia, irregular heart beats, and obstructed blood flow to the heart are the most frequent factors.

Published in the April 28 edition of the *Archives of Internal Medicine*, researchers identified additional health factors present at hospital admission, which contributed to the hospitalization and impacted length of hospital stay, re-hospitalization and mortality both in the hospital and post-discharge.

“Understanding the factors that can exacerbate heart failure and lead to hospitalizations -- especially the ones that are avoidable -- are invaluable to clinicians to help us improve management of heart failure,” said first author Dr. Gregg C. Fonarow, UCLA’s Eliot Corday Chair in Cardiovascular Medicine and Science and director of the Ahmanson-UCLA Cardiomyopathy Center.

According to Fonarow, this is one of the largest studies to examine the frequency that these precipitating factors occur in heart failure patients at admission and to assess the impact they have on clinical outcomes. An academic team of researchers across the country contributed to the study.

Heart failure affects five million Americans, and nearly 3.6 million hospitalizations each year are attributed to the condition, which occurs

when the heart's left ventricle can't pump enough blood to the body's other organs.

Researchers utilized data from a large heart failure patient registry called the Organized Program to Initiate Lifesaving Treatment in Hospitalized Patients with Heart Failure (Optimize-HF), which includes participation from 259 hospitals across the country.

Between March 2003 and December 2004, 48,612 eligible heart failure patients at academic and community hospitals nationwide were enrolled in the registry. A 5,791 patient subgroup was followed for 60-90 days after hospital discharge to collect additional data on outcomes, including mortality and re-hospitalization rates.

Researchers pinpointed the most frequent factors contributing to hospital admission: Pneumonia or respiratory ailments were identified in 15.3 percent of patients; obstructed blood flow to the heart called ischemia was found in 14.7 percent of patients; irregular heart beat or arrhythmia was present in 13.5 percent of patients and uncontrolled hypertension was seen in 10.7 patients.

Other factors included not adhering to a special diet (5.2 percent of patients) not taking medications (8.9 percent), and worsening kidney function (6.8 percent).

“Over 60 percent of hospitalized heart failure patients had at least one of these precipitating factors at hospital admission,” said Fonarow.

Authors determined that in-hospital mortality rates were lower in patients with none of these factors compared to those with one or more of them.

Pneumonia, ischemia and worsening kidney function were associated

with higher in-hospital mortality rates and longer length of hospital stays.

“The study offers important insight and points to where we can intervene early, such as making sure patients with heart failure are immunized against flu and pneumonia,” added Fonarow.

Non-adherence to diet and uncontrolled hypertension were associated with lower mortality rates and shorter hospital stays.

Fonarow notes that some conditions are easier to handle such as helping patients get back on their medication to lower blood pressure or following a correct diet, which may help explain the lower mortality and shorter hospital stays for patients with these precipitating factors.

After leaving the hospital, 60 to 90 day follow-up revealed the highest mortality rates occurred in patients who had ischemia or worsening kidney function upon hospital admission. The lowest mortality rates after discharge occurred in patients who had uncontrolled hypertension at admission.

“Learning how these factors influence length of hospital stay, mortality and re-hospitalization are key to helping us better manage patients and preventing future hospitalizations,” said Fonarow.

Fonarow notes that higher risk patients may benefit from closer monitoring during hospitalization and frequent follow-ups once leaving the hospital. Additional patient education and disease management strategies may help patients adhere to diet and medications.

“In future studies we plan to target how specific interventions based on these precipitating factors, such as flu vaccinations, may help this high-risk heart failure population,” added Fonarow.

Source: University of California - Los Angeles

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