

Hospitalizations for heart failure, but not MI, more common during influenza season

By **Acp Hospitalist Weekly Staff**, acphospitalist.org

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Higher influenza activity in a given month was associated with an increase in hospitalizations for heart failure, but not myocardial infarction, within the same month, a recent study found.

Researchers used surveillance data from the Atherosclerosis Risk in Communities study, which included 451,588 people ages 35 to 84 years living in Jackson, Miss., some city suburbs of Minneapolis, and two rural counties in North Carolina and Maryland. From October 2010 to September 2014, researchers compared the monthly frequency of hospitalizations for heart failure and myocardial infarction to influenza activity (defined as the percentage of patient visits to sentinel clinicians for influenza-like illness by state), as reported by the CDC and Prevention Surveillance Network. Results were published online on March 27 by *JAMA Cardiology*.

During the study period, there were 4,321 hospitalizations due to heart failure (47.3% women; 53.3% white) and 3,541 due to myocardial infarction (45.1% women, 57.4% white). On average, a 5% monthly absolute increase in influenza activity was associated with a 24% increase in heart failure hospitalization rates within the same month after multivariable adjustment (incidence rate ratio, 1.24; $P < 0.001$). These results suggest that in a month with high influenza activity, about 19% (95% CI, 10% to 28%) of heart failure hospitalizations could be attributable to influenza.

On the other hand, overall influenza activity was not associated with myocardial infarction hospitalizations (incidence rate ratio, 1.02; $P=0.72$). During the two most severe influenza seasons (2010-2011 and 2012-2013), however, there was a 22% and 20% temporally associated increased risk of heart failure (incidence rate ratios, 1.22 [$P=0.04$] and 1.20 [$P=0.02$], respectively) as well as a positive but not significant association with myocardial infarction in the 2012-2013 season (incidence rate ratio, 1.12; $P=0.25$). Influenza activity in the months before hospitalization was not associated with either outcome.

The study authors noted limitations, such as the fact that individual influenza illness and vaccination status of hospitalized patients were not known. They also noted the possibility that other infectious causes may parallel influenza activity and account for some of the association.

“These data suggest that while hospitalizations for influenza and pneumonia, and deaths associated with these, are greatest during severe influenza seasons, acute [cardiovascular] events are also likely increased during periods of peak influenza activity. ... Addressing influenza activity may be valuable in efforts to prevent [heart failure] hospitalizations,” the authors concluded.

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